EDITION
HEETS

SRA
MATHEMATIC
LEARNING SYSTEM

"The Metric Commission has granted use of the National Symbol for Metric Conversion"

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Here are the symbols used by the ancient Romans to record numbers.

I = 1   V = 5   X = 10   L = 50   C = 100   D = 500   M = 1000

Write the standard numeral for each roman numeral.

	a		b		c		d
1.	VI __6__	XXIV	__24__	LXXIII	__73__	CCCLXXVI	__376__
2.	XC __90__	LXXXIV	__84__	XVIII	__18__	CCCLXXVII	__377__
3.	CM __900__	LII	__52__	XLV	__45__	CDXCVIII	__498__
4.	LX __60__	XCIX	__99__	CML	__950__	CMLXIV	__964__
5.	CV __105__	LVII	__57__	DCLV	__655__	MDLXVIII	__1568__

6. Claudius was the emperor of Rome during the years A.D. XLI through A.D. LIV and Nero was emperor from A.D. LIV until A.D. LXVIII.
Write the standard numerals for these dates.

A.D. 41 – A.D. 54   A.D. 54 – A.D. 68

7. Nerva became emperor in A.D. XCVI and Trajan became emperor two years later.

Write a roman numeral for the year in which Trajan became emperor. A.D. XCVIII

Write a roman numeral for each standard numeral.

	a		b		c		d
8. 1	__I__	10	__X__	13	__XIII__	100	__C__
9. 2	__II__	20	__XX__	14	__XIV__	200	__CC__
10. 3	__III__	30	__XXX__	19	__XIX__	300	__CCC__
11. 4	__IV__	40	__XL__	22	__XXII__	400	__CD__
12. 5	__V__	50	__L__	35	__XXXV__	500	__D__
13. 6	__VI__	60	__LX__	47	__XLVII__	600	__DC__
14. 7	__VII__	70	__LXX__	59	__LIX__	700	__DCC__
15. 8	__VIII__	80	__LXXX__	61	__LXI__	800	__DCCC__
16. 9	__IX__	90	__XC__	88	__LXXXVIII__	900	__CM__

2705475

1. Write the correct headings on the place value chart.

	millions			thousands			ones		
	hundreds	tens	ones	hundreds	tens	ones	hundreds	tens	ones
a						7	4	0	0
b			3	2	4	6	0	2	9
c							5	9	1
d		4	6	3	0	4	0	0	5
e					9	0	0	9	0
f	8	0	1	0	0	2	1	0	4

2. Write the following numerals on the chart.

  a Seven thousand, four hundred
  b Three million, two hundred forty-six thousand, twenty-nine
  c Five hundred ninety-one
  d Forty-six million, three hundred four thousand, five
  e Ninety thousand, ninety
  f Eight hundred one million, two thousand, one hundred four

3. In the numeral 241 803 069, what digit is in the

  a hundreds place?   **0**   **b** tens place?   **6**

  c ten-thousands place?   **0**   **d** thousands place?   **3**

  e millions place?   **1**   **f** hundred-millions place?   **2**

4. In the numeral 76 923 148, what is the value

  a of the 9?   900 000

  b of the 3?   3 000

  c of the 7?   70 000 000

1. Put in the spaces. Then read each numeral.

a 3145862 _**3 145 862**_   **b** 59002 _**59 002**_

c 20040013 _**20 040 013**_   **d** 4306290 _**4 306 290**_

e 910043106 _**910 043 106**_   **f** 80905 _**80 905**_

2. Write a standard numeral for each number.
Be sure to leave the spaces.

a Fifteen thousand, nine hundred twenty-six

_**15 926**_

b Seven hundred twenty-two million, eight hundred fifty-nine thousand, six

_**722 859 006**_

c Two hundred seventy-two thousand, three hundred eighteen

_**272 318**_

d Fifty million, four thousand

_**50 004 000**_

3. Write the cheque below for the amount of $587.25.
You decide who should get the money.

	131
	_____ 19 _____
Pay to the order of _____	$ _**587. 25**_
**Five hundred eighty-seven** ——$\frac{25}{100}$ Dollars	
	_____

Here are some place-value names for the number 3598.

thousands	hundreds	tens	ones
3	5	8	18
3	4	18	18
2	14	18	18

thousands	hundreds	tens	ones
3	4	19	8
2	14	19	8
2	15	9	8

1. Write three names for the number 5256 in the chart below. *answers will vary.*

thousands	hundreds	tens	ones
5	2	4	16
4	12	4	16
5	1	15	6

2. Write three names for the number 9006 in the chart below. *answers will vary.*

thousands	hundreds	tens	ones
8	10	0	6
8	9	10	6
8	9	9	16

Write the word names for each place value on the chart.

Write two other names for each number.

Use this sort of renaming as you try this subtraction problem.

⑤ 3000
  − 697
   2303

	thousands	hundreds	tens	ones
①	7	3	8	8
a	7	3	7	18
b	6	13	7	18
②	2	5	1	4
a	2	4	11	4
b	1	14	11	4
③	3	7	3	6
a	3	7	2	16
b	3	6	12	16
④	5	0	8	9
a	4	10	8	9
b	5	0	7	19

Study these renamed numbers.

```
  7|12              2|14|11           1|9|13|13          3|9|9|10
  8 2              3 5 1            2|0 4 3           4|0 0 0
- 2 7            - 2 7 6           - |8 8 9           - |3 4 5
  5 5                7 5           1|1 5 4           3 6 5 5
```

Rename and subtract.

```
    5 17              4 14              4 9 10            3 12 16 15        8 9 9 10
1.  6 7       2.  8 5 4       3.  5 0 0       4.  4 3 7 5      5.  9 0 0 0
  - 1 8          -   3 8        -   7 1         -   6 8 8        -   2 7 4
    4 9              8 1 6            4 2 9            3 6 8 7          8 7 2 6
```

Subtract.

	a	b	c	d	e
①	39 − 5 **34**	49 − 26 **23**	566 − 16 **550**	975 − 32 **943**	187 − 176 **11**
②	50 − 7 **43**	28 − 9 **19**	63 − 46 **17**	194 − 85 **109**	741 − 29 **712**
③	395 − 96 **299**	472 − 89 **383**	637 − 99 **538**	430 − 82 **348**	303 − 46 **257**
④	782 − 295 **487**	607 − 365 **242**	802 − 466 **336**	900 − 373 **527**	500 − 478 **22**
⑤	1254 − 985 **269**	6834 − 759 **6075**	5031 − 4145 **886**	8003 − 1314 **6689**	8093 − 6099 **1994**

Here is an addition model with renaming.

①①①
7 9 7 8
+ 7 3 4 3
─────────
15 3 2 1

8 + 3 = ①1 (ones)
(7 + 4) + 1 = ①2 (tens)
(9 + 3) + 1 = ①3 (hundreds)
(7 + 7) + 1 = 15 (thousands)

Add.

1.	2.	3.	4.	5.
68	607	796	8790	6879
+ 8	+ 93	+ 638	+ 549	+ 5625
76	700	1434	9339	12 504

Add.

	a	b	c	d	e
①	41	65	549	606	839
	+ 8	+ 34	+ 50	+ 93	+ 140
	49	99	599	699	979
②	69	73	65	368	673
	+ 8	+ 7	+ 29	+ 24	+ 307
	77	80	94	392	980
③	267	738	407	775	275
	+ 87	+ 99	+ 94	+ 198	+ 736
	354	837	501	973	1011
④	583	852	632	462	637
	+ 17	+ 169	+ 188	+ 395	+ 543
	600	1021	820	857	1180
⑤	9243	8790	1001	6879	9358
	+ 768	+ 349	+ 9009	+ 5625	+ 675
	10 011	9139	10 010	12 504	10 033

Number line: 0 10 20 30 40 50 60 70 80 90 100
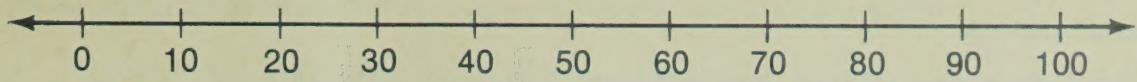
1. Ring the numerals for which 40 is the nearest ten.

32 34 (36) (37) (38)
(41) (42) (44) 47 49

2. Ring the numerals for which 90 is the nearest ten.

81 82 83 84 (85)
(91) (92) (93) (94) 95

Number line: 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10 000
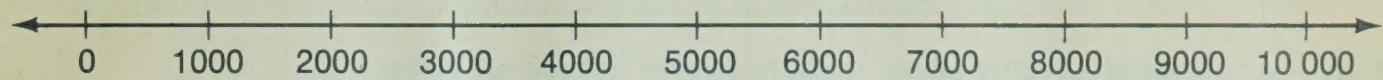
3. Ring the numerals for which 2000 is the nearest thousand.

1005 1050 (1500) (1550)
(2005) (2050) 2500 2550

4. Ring the numerals for which 7000 is the nearest thousand.

(6500) (6750) (7470) 7612
7700 7750 7800 7900

5. Round to the nearest ten.

64 __60__   13 __10__   47 __50__   96 __100__   75 __80__

6. Round to the nearest hundred.

249 __200__   580 __600__   376 __400__   451 __500__   948 __900__

7. Round to the nearest thousand.

3904 __4000__   6409 __6000__   7099 __7000__   9610 __10 000__   2470 __2000__

8. Round to the nearest ten-thousand.

46 700 __50 000__   55 555 __60 000__   93 475 __90 000__

23 600 __20 000__   38 342 __40 000__

9. Round to the nearest ten, then to the nearest hundred.

	a	b	c	d	e
	436	142	453	548	765
nearest ten	440	140	450	550	770
nearest hundred	400	100	500	500	800

Write a standard numeral.

① Six hundred forty-seven million, two hundred thousand, fifty-nine

647 200 059

② Thirty million, one hundred ninety thousand, three hundred eight

30 190 308

③ Five million, two hundred sixteen thousand, seven hundred nine

5 216 709

④ Fifty-four hundred seventy-seven million, twelve thousand, eleven

5 477 012 011

Round to the nearest ten. Add the rounded numbers.

⑤ 132   130   ⑥ 515   520   ⑦ 176   180

  + 49 + __50__   + 10 + __10__   + 300 + __300__

     180   530   480

Round to the nearest hundred. Compute the rounded numbers.

⑧ 582   600   ⑨ 823   800   ⑩ 465   500

  − 475 − __500__   − 281 − __300__   + 861 + __900__

     100   500   1400

Round to the nearest thousand. Compute the rounded numbers.

⑪ 7499   7000   ⑫ 3009   3 000   ⑬ 4068   4000

  − 2901 − __3000__   + 9834 + __10 000__   − 1307 − __1000__

     4000   13 000   3000

Round to the nearest million. Compute the rounded numbers.

⑭ 3 250 000 3 000 000   ⑮ 9 272 370 9 000 000   ⑯ 23 902 100 24 000 000

  + 2 541 100 + __3 000 000__   + 2 104 000 + __2 000 000__   − 1 844 00 − __2 000 000__

       6 000 000   11 000 000   22 000 000

1. Write the standard numeral for each of these roman numerals.

a V __5__   b III __3__   c XIV __14__   d XXX __30__   e CD __400__

2. Write a roman numeral for each of these standard numerals.

a 6 __VI__   b 12 __XII__   c 19 __XIX__   d 50 __L__   e 100 __C__

3. Name the value of any underlined digit in this numeral. 5 471 392

5→ 5 000 000
4→ 400 000
7→ 70 000
1→ 1 000
3→ 300

4. Round each number to the nearest ten. Then round to the nearest hundred.

	a 417	b 283	c 474	d 949	e 365
nearest ten	420	280	470	950	370
nearest hundred	400	300	500	900	400

5. Add.

a 738 + 74 = 812   b 601 + 782 = 1383   c 894 + 866 = 1760   d 318 + 354 = 672   e 6866 + 3645 = 10 511

6. Subtract.

a 876 − 59 = 817   b 106 − 69 = 37   c 554 − 283 = 271   d 900 − 712 = 188   e 5793 − 1205 = 4588

7. Write as a standard numeral.

a Two hundred thousand, three hundred seventy-one

200 371

b Four thousand, five hundred nine

4509

Multiply.

	a	b	c	d	e	f	g	h
1.	4 × 4 = 16	5 × 6 = 30	7 × 3 = 21	8 × 2 = 16	4 × 9 = 36	6 × 1 = 6	0 × 9 = 0	5 × 3 = 15
2.	7 × 1 = 7	9 × 4 = 36	4 × 6 = 24	8 × 6 = 48	5 × 8 = 40	6 × 6 = 36	4 × 3 = 12	6 × 7 = 42
3.	7 × 5 = 35	6 × 3 = 18	7 × 7 = 49	4 × 5 = 20	5 × 9 = 45	8 × 9 = 72	1 × 9 = 9	8 × 7 = 56
4.	3 × 7 = 21	8 × 4 = 32	6 × 8 = 48	0 × 6 = 0	5 × 7 = 35	7 × 6 = 42	8 × 8 = 64	8 × 5 = 40
5.	4 × 8 = 32	5 × 5 = 25	3 × 6 = 18	9 × 9 = 81	2 × 9 = 18	7 × 8 = 56	9 × 5 = 45	2 × 6 = 12
6.	3 × 9 = 27	7 × 4 = 28	3 × 3 = 9	5 × 4 = 20	4 × 7 = 28	9 × 8 = 72	7 × 0 = 0	6 × 5 = 30
7.	9 × 7 = 63	2 × 7 = 14	8 × 3 = 24	6 × 9 = 54	9 × 3 = 27	9 × 6 = 54	6 × 4 = 24	7 × 9 = 63
8.	6 × 2 = 12	8 × 1 = 8	9 × 2 = 18	0 × 3 = 0	3 × 8 = 24	2 × 5 = 10	3 × 4 = 12	3 × 5 = 15

> A prime number is a number greater than 1 that has only two factors—1 and itself.

1. Underline each *prime* number.

a	1	<u>2</u>	<u>3</u>	4	<u>5</u>	6	<u>7</u>	8	9	10
b	<u>11</u>	12	<u>13</u>	14	15	16	<u>17</u>	18	<u>19</u>	20
c	21	22	<u>23</u>	24	25	26	27	28	<u>29</u>	30
d	<u>31</u>	32	33	34	35	36	<u>37</u>	38	39	40
e	<u>41</u>	42	<u>43</u>	44	45	46	<u>47</u>	48	49	50
f	51	52	<u>53</u>	54	55	56	57	58	<u>59</u>	60
g	<u>61</u>	62	63	64	65	66	<u>67</u>	68	69	70
h	<u>71</u>	72	<u>73</u>	74	75	76	77	78	<u>79</u>	80

> A composite number has at least one pair of factors besides 1 and itself.
> The number 1 is neither a prime number nor a composite number.

2. Using problem 1 to guide you, list all the *composite* numbers between 1 and 80.
Leave a blank where each prime number would be.

a	X	___	___	4	___	6	___	8	9	10
b	___	12	___	14	15	16	___	18	___	20
c	21	22	___	24	25	26	27	28	___	30
d	___	32	33	34	35	36	___	38	39	40
e	___	42	___	44	45	46	___	48	49	50
f	51	52	___	54	55	56	57	58	___	60
g	___	62	63	64	65	66	___	68	69	70
h	___	72	___	74	75	76	77	78	___	80

1. Ring the correct rounded number.

Number	Rounded		Number	Rounded		Number	Rounded
a 32	(30) or 40	b	76	70 or (80)	c	183	100 or (200)
d 545	(500) or 600	e	741	(700) or 800	f	6437	(6000) or 7000
g 274	200 or (300)	h	498	400 or (500)	i	8802	8000 or (9000)

2. Complete.

a 3 × 20 = __60__   b 2 × 50 = __100__   c 5 × 80 = __400__

d 7 × 60 = __420__   e 8 × 40 = __320__   f 6 × 300 = __1800__

g 9 × 70 = __630__   h 3 × 800 = __2400__   i 7 × 2000 = __14 000__

j 6 × 400 = __2400__   k 4 × 600 = __2400__   l 2 × 6000 = __12 000__

3. Round the second factor and estimate the product.

a 2 × 28 __60__   b 7 × 401 __2800__   c 8 × 4721 __40 000__

d 8 × 47 __400__   e 6 × 259 __1800__   f 5 × 9248 __45 000__

g 2 × 83 __160__   h 5 × 319 __1500__   i 6 × 6615 __42 000__

When a factor is rounded up, the exact product will be less than the estimate.
When a factor is rounded down, the exact product will be more than the estimate.

---

4. Use > or < to complete each sentence.

a 6 × 22 (>) 6 × 20   b 3 × 157 (<) 3 × 200   c 4 × 89 (<) 4 × 90

d 2 × 821 (>) 2 × 800   e 3 × 38 (<) 3 × 40   f 5 × 352 (<) 5 × 400

g 7 × 63 (>) 7 × 60   h 8 × 291 (<) 8 × 300   i 4 × 47 (<) 4 × 50

j 9 × 525 (>) 9 × 500   k 9 × 33 (>) 9 × 30   l 8 × 776 (<) 8 × 800

Round one factor, estimate the product, and write your estimate in the parentheses. Compute the exact product. Compare your answers. If the exact answer is close to your estimate, your answer is reasonable.

	a	b	c

1.

a.
```
    7 6
  ×   3
    228
```
(_240_)

b.
```
    2 9
  ×   5
    145
```
(_150_)

c.
```
    9 2
  ×   6
    552
```
(_540_)

2.

a.
```
    1 1 3
  ×     2
      226
```
(_200_)

b.
```
    2 9 6
  ×     5
     1480
```
(_1500_)

c.
```
    8 2 9
  ×     7
     5803
```
(_5600_)

3.

a.
```
    5 9 2
  ×     6
     3552
```
(_3600_)

b.
```
    8 7 6
  ×     3
     2628
```
(_2700_)

c.
```
    3 7 1
  ×     4
     1484
```
(_1600_)

4.

a.
```
    3 2 5
  ×     3
      975
```
(_900_)

b.
```
    9 7 8
  ×     8
     7824
```
(_8000_)

c.
```
    4 2 9
  ×     4
     1716
```
(_1600_)

Round the 2-digit number to the nearest ten, and *estimate* the product.

① 3 × 68 __210__

② 2 × 51 __100__

③ 4 × 11 __40__

④ 7 × 21 __140__

⑤ 8 × 97 __800__

⑥ 5 × 39 __200__

⑦ 6 × 74 __420__

⑧ 7 × 82 __560__

⑨ 2 × 89 __180__

⑩ 9 × 12 __90__

⑪ 3 × 41 __120__

⑫ 9 × 25 __270__

Round the 3-digit number to the nearest hundred, and *estimate* the product.

⑬ 2 × 330 __600__

⑭ 6 × 107 __600__

⑮ 7 × 470 __3500__

⑯ 8 × 193 __1600__

⑰ 3 × 298 __900__

⑱ 8 × 861 __7200__

⑲ 2 × 168 __400__

⑳ 1 × 790 __800__

㉑ 9 × 742 __6300__

㉒ 6 × 985 __6000__

㉓ 5 × 179 __1000__

㉔ 4 × 381 __1600__

Compute the exact products. Are your answers reasonable?

㉕
```
  253
×   6
─────
 1518
```

㉖
```
  749
×   4
─────
 2996
```

㉗
```
  669
×   8
─────
 5352
```

㉘
```
  738
×   9
─────
 6642
```

㉙
```
  579
×   2
─────
 1158
```

㉚
```
  636
×   4
─────
 2544
```

㉛
```
  980
×   6
─────
 5880
```

㉜
```
  269
×   3
─────
  807
```

Estimate the answer. Write your estimate in the parentheses. Then compute the exact product. Compare your estimate with the exact answer.

Example
$$\begin{array}{r} 32 \\ \times\ 27 \\ \hline 224 \\ 640 \\ \hline 864 \end{array}$$
30×30
(900)

①
$$\begin{array}{r} 34 \\ \times\ 8 \\ \hline 272 \end{array}$$
(240)

②
$$\begin{array}{r} 73 \\ \times\ 3 \\ \hline 219 \end{array}$$
(210)

③
$$\begin{array}{r} 719 \\ \times\ 6 \\ \hline 4314 \end{array}$$
(4200)

④
$$\begin{array}{r} 320 \\ \times\ 3 \\ \hline 960 \end{array}$$
(900)

⑤
$$\begin{array}{r} 138 \\ \times\ 20 \\ \hline 2760 \end{array}$$
(2000)

⑥
$$\begin{array}{r} 846 \\ \times\ 50 \\ \hline 42\ 300 \end{array}$$
(40 000)

⑦
$$\begin{array}{r} 207 \\ \times\ 90 \\ \hline 18\ 630 \end{array}$$
(18 000)

⑧
$$\begin{array}{r} 539 \\ \times\ 40 \\ \hline 21\ 560 \end{array}$$
(20 000)

⑨
$$\begin{array}{r} 28 \\ \times\ 49 \\ \hline 1372 \end{array}$$
(1500)

⑩
$$\begin{array}{r} 70 \\ \times\ 16 \\ \hline 1120 \end{array}$$
(1400)

16

Divide.

	a	b	c	d
1.	$56 \div 7 = 8$	$72 \div 9 = 8$	$32 \div 4 = 8$	$30 \div 5 = 6$
2.	$24 \div 6 = 4$	$16 \div 8 = 2$	$48 \div 8 = 6$	$49 \div 7 = 7$
3.	$63 \div 9 = 7$	$54 \div 6 = 9$	$35 \div 5 = 7$	$24 \div 8 = 3$
4.	$14 \div 7 = 2$	$64 \div 8 = 8$	$18 \div 9 = 2$	$28 \div 4 = 7$
5.	$42 \div 7 = 6$	$24 \div 3 = 8$	$72 \div 8 = 9$	$48 \div 6 = 8$
6.	$16 \div 4 = 4$	$81 \div 9 = 9$	$35 \div 7 = 5$	$18 \div 6 = 3$
7.	$36 \div 6 = 6$	$20 \div 5 = 4$	$32 \div 8 = 4$	$21 \div 7 = 3$
8.	$45 \div 5 = 9$	$36 \div 9 = 4$	$30 \div 6 = 5$	$40 \div 8 = 5$
9.	$56 \div 8 = 7$	$15 \div 5 = 3$	$54 \div 9 = 6$	$40 \div 5 = 8$
10.	$45 \div 9 = 5$	$28 \div 7 = 4$	$24 \div 4 = 6$	$27 \div 9 = 3$

Complete.

	a	b	c	d
11.	$3 \times 6 = 18$	$9 \times 3 = 27$	$5 \times 5 = 25$	$9 \times 4 = 36$
12.	$2 \times 6 = 12$	$4 \times 8 = 32$	$7 \times 3 = 21$	$8 \times 7 = 56$
13.	$5 \times 9 = 45$	$7 \times 6 = 42$	$8 \times 8 = 64$	$9 \times 9 = 81$
14.	$5 \times 4 = 20$	$3 \times 4 = 12$	$4 \times 7 = 28$	$9 \times 7 = 63$

Example 1

```
     32
     2
    30
 3)96
    90  (30 × 3)
     6
     6  (2 × 3)
     0
```

Check
```
   32
 ×  3
   96
```

Example 2

```
     15 R1
      5
     10
 6)91
    60  (10 × 6)
    31
    30  (5 × 6)
     1
```

Check
```
   15
 ×  6
   90
 +  1
   91
```

Divide. Check each answer.

1.

```
 12R4
   2
  10
5)64
  50
  14
  10
   4
```

Check
```
   12
  X5
   60
 + 4
   64
```

2.

```
 12 R4
   2
  10
6)76
  60
  16
  12
   4
```

Check
```
   12
  X6
   72
 + 4
   76
```

3.

```
   26
    6
   20
2)52
   40
   12
   12
    0
```

Check
```
   26
  X2
   52
```

4.

```
  17
   7
  10
4)68
  40
  28
  28
   0
```

Check
```
   17
  X 4
   68
```

5.

```
  10 RI
  10
7)71
  70
   1
```

Check
```
   10
  X7
   70
 + 1
   71
```

6.

```
  15 R5
   5
  10
6)95
  60
  35
  30
   5
```

Check
```
   15
  X6
   90
 +5
   95
```

7. Ring the prime numbers. Underline the composite numbers.

81   82   (83)   84   85   86   87   88   (89)   90

91   92   93   94   95   96   (97)   98   99   100

Underline one of the three estimates given.

	a	b	c
1. How many 2s in 900?	300	<u>400</u>	500
2. How many 3s in 520?	<u>100</u>	200	300
3. How many 7s in 250?	<u>30</u>	40	50
4. How many 6s in 200?	10	20	<u>30</u>
5. How many 5s in 800?	<u>100</u>	200	300
6. How many 4s in 1500?	200	<u>300</u>	400
7. How many 8s in 2000?	100	<u>200</u>	300
8. How many 9s in 1150?	<u>100</u>	200	300
9. How many 5s in 3700?	500	600	<u>700</u>
10. How many 3s in 1000?	<u>300</u>	400	500

Estimate the quotients and divide.

11. $6\overline{)5580}$ → 930

12. $7\overline{)1036}$ → 148

13. $9\overline{)5168}$ → 574 R2

Divide.

	a	b	c	d

① 9)72 → **8** 7)56 → **8** 8)64 → **8** 9)63 → **7**

② 4)54 → **13R2** 7)87 → **12R3** 5)59 → **11R4** 6)84 → **14**

③ 3)383 → **127 R2** 8)917 → **114R5** 9)933 → **103R6** 5)627 → **125R2**

④ 6)4680 → **780** 4)7897 → **1974R1** 3)8660 → **2886R2** 9)3811 → **423R4**

Answer each question.

	a	b	c
1. How many 3s	in 18? __6__	in 180? __60__	in 1800? __600__
2. How many 6s	in 30? __5__	in 300? __50__	in 3000? __500__
3. How many 7s	in 63? __9__	in 630? __90__	in 6300? __900__
4. How many 2s	in 60? __30__	in 600? __300__	in 6000? __3000__
5. How many 9s	in 45? __5__	in 450? __50__	in 4500? __500__

	a	b
6. How many 10s	in 120? __12__	in 1200? __120__
7. How many 40s	in 360? __9__	in 3600? __90__
8. How many 50s	in 350? __7__	in 3500? __70__
9. How many 60s	in 240? __4__	in 2400? __40__
10. How many 80s	in 800? __10__	in 8000? __100__

Use > or < to make each sentence true.

a	b	c
11. $2300 \div 70 \;(<)\; 100$	$1400 \div 10 \;(>)\; 100$	$6300 \div 30 \;(>)\; 100$
12. $3360 \div 20 \;(>)\; 100$	$2480 \div 40 \;(<)\; 100$	$5790 \div 40 \;(>)\; 100$
13. $1253 \div 50 \;(<)\; 100$	$4472 \div 60 \;(<)\; 100$	$9835 \div 80 \;(>)\; 100$

Divide.

14. $30 \overline{)690}$ → 23

15. $70 \overline{)3780}$ → 54

16. $80 \overline{)8412}$ → 105 R12

Estimate. Then compute the exact answer.

	a	b	c	d

1.
$$630 \times 4 = 2520$$
$$402 \times 8 = 3216$$
$$347 \times 5 = 1735$$
$$250 \times 12 = 3000$$

2.
$$329 \times 51 = 16\,779$$
$$871 \times 49 = 42\,679$$
$$312 \times 28 = 8736$$
$$970 \times 36 = 34\,920$$

3.
$$5\overline{)465} = 93$$
$$6\overline{)618} = 103$$
$$4\overline{)900} = 225$$
$$9\overline{)936} = 104$$

4.
$$3\overline{)9240} = 3080$$
$$7\overline{)5883} = 840\,R3$$
$$30\overline{)850} = 28\,R10$$
$$80\overline{)8480} = 106$$

Line segment AB has A as an endpoint.

1. Name two more line segments that have A as an endpoint. __AD__ __AC__

2. Name three line segments that have B as an endpoint. __CB__ __DB__ __AB__.

3. Name three line segments that have D as an endpoint. __DC__ __AD__ __DB__

4. Label the points on the line segment below. Do not use letters A, B, C, or D.

Answers will vary.

N M   O   P   Q

5. Name ten line segments shown in problem 4.
Name a point between the endpoints.
If there are no labelled points between the endpoints, write "none." *Answers will vary.*

Line segment	Point between endpoints		Line segment	Point between endpoints
a __NO__	__M__	**b**	__NP__	M (or O)
c __OP__	none	**d**	__NQ__	P (or M or O)
e __PQ__	none	**f**	__NM__	none
g __OQ__	P	**h**	__MQ__	O (or P)
i __MP__	O	**j**	__MO__	none

6. Name the longest line segment in problem 5. __NQ__

7. Name the shortest line segment in problem 5. __NM__

8. Label each point.
Answers will vary.

                    T   U

M   R   S   V   W   N
                           X
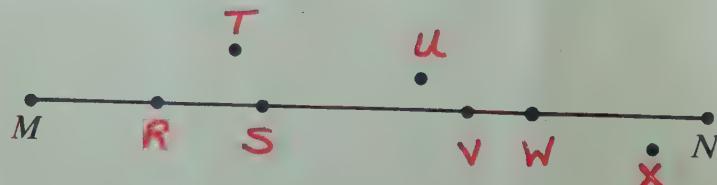
9. Name each point that is not on line segment MN. __T, U, X__
Answers will vary.

1. Name the endpoint of each ray. Then name the ray.
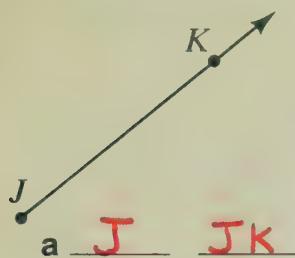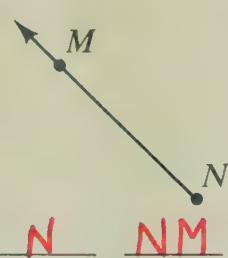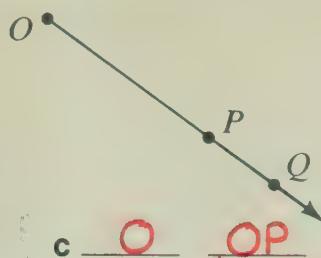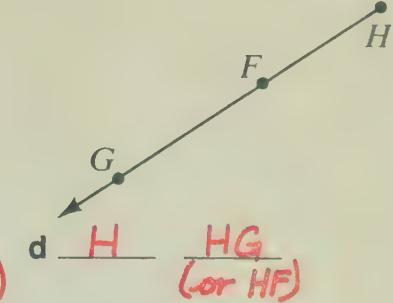
a __J__ __JK__   b __N__ __NM__   c __O__ __OP__ _(or OQ)_   d __H__ __HG__ _(or HF)_

2. Label the points on the line below. *Answers will vary.*

A · B C · D · E
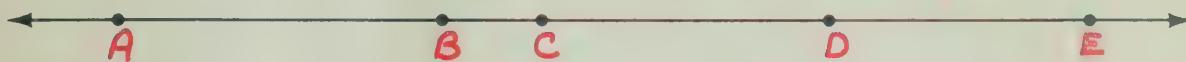
3. Write five names for the line shown in problem 2. *Answers will vary.*

a __AB__   b __BE__   c __BC__   d __CD__   e __AD__

4. Name two rays in problem 2 that have the same endpoint. *Answers will vary.*

a __BA__   b __BC__

5. Draw and label:

a line segment AB that includes point C.

A   C   B

b line MN that includes points O, P, and Q. *Answers will vary.*

M   O   P   Q   N
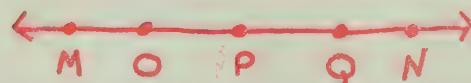
c line RS that includes two rays with the endpoint T.

R T S
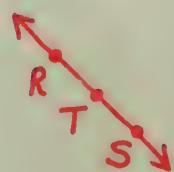
d two lines that cross at point O and include rays OA, OB, OC, and OD and line segments AJ, BK, CL, and DM. *Answers will vary.*

A J L K B O C D M
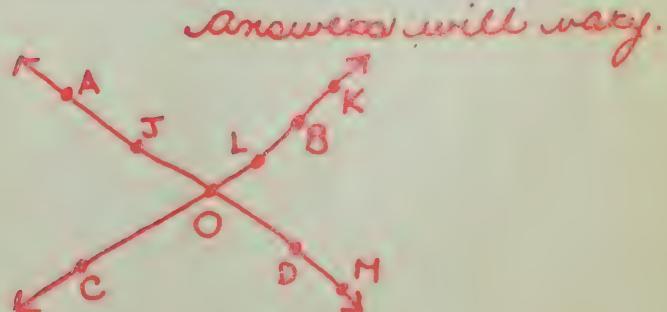
Draw and label two line segments that are congruent to each line segment below. Draw one line segment on each grid that is not congruent to the other line segments on the grid. Label this line segment *AZ*. *Answers will vary.*

1.
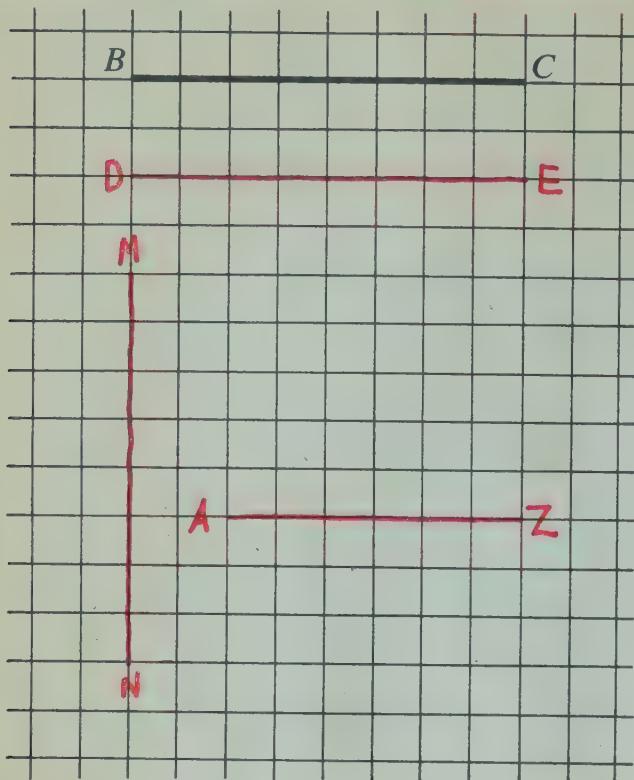
2.
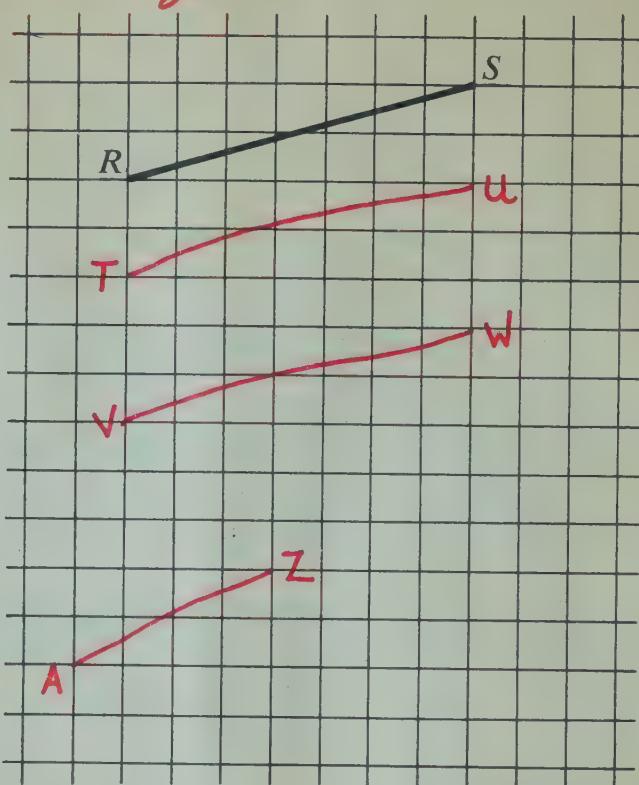
3.
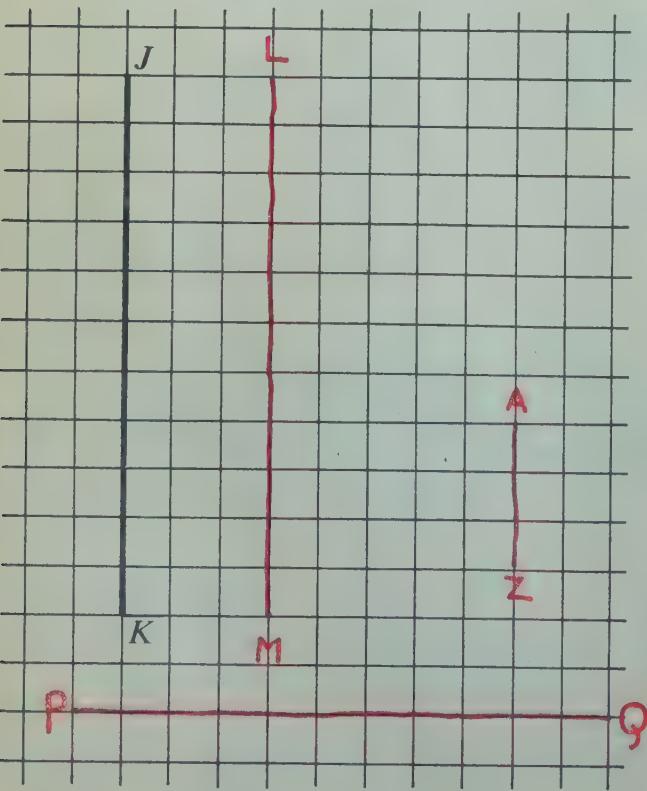
4.
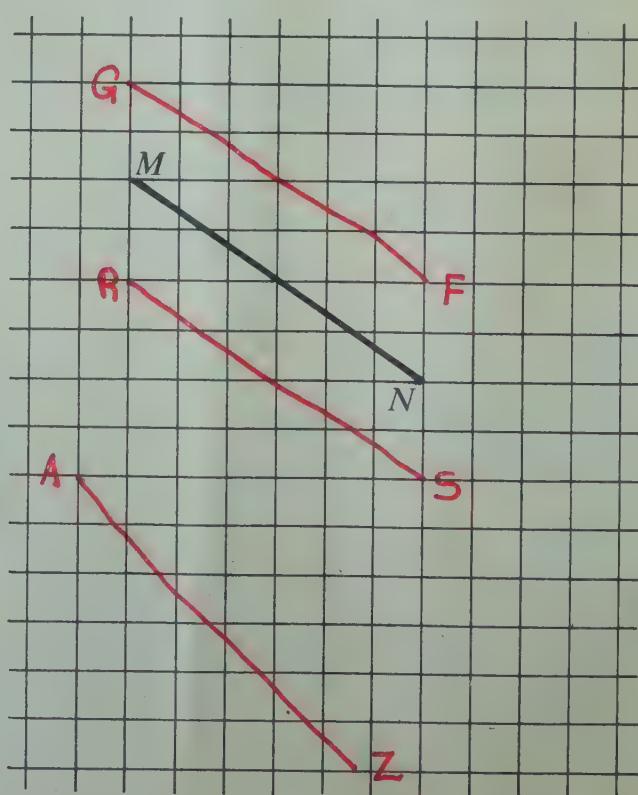
1. Draw two line segments that intersect at point *A*.

2. Draw four line segments that intersect at point *B*.
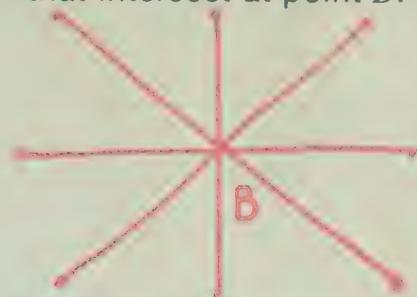
3. Draw two line segments that could never intersect even if extended.

4. Draw four line segments that could never intersect even if extended.

5. Name the congruent line segments.

   a *AB* is congruent to __CD__.

   b *EF* is congruent to __KL__.

   c *GH* is congruent to __IJ__.

6. Name the parallel line segments.

   a *AB* is parallel to __CD__ and __EF__.

   b *GH* is parallel to __IJ__.

   c *KL* is parallel to __MN__.

7. Name the intersecting line segments.

   a *AB* intersects __GH__.

   b *CD* intersects __GH__.

   c *EF* intersects __GH__.
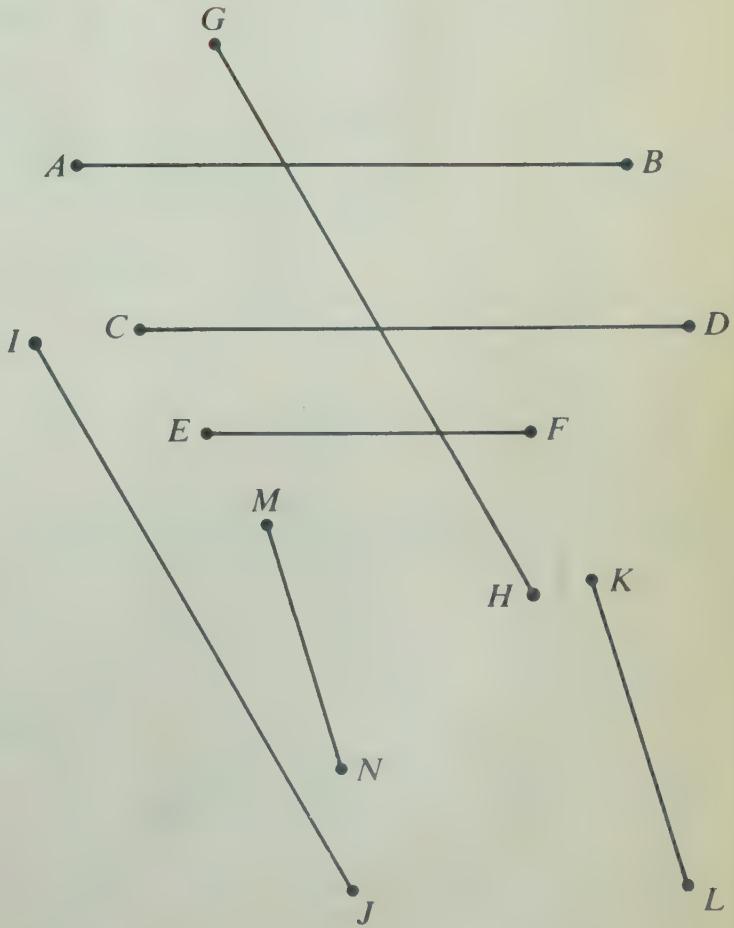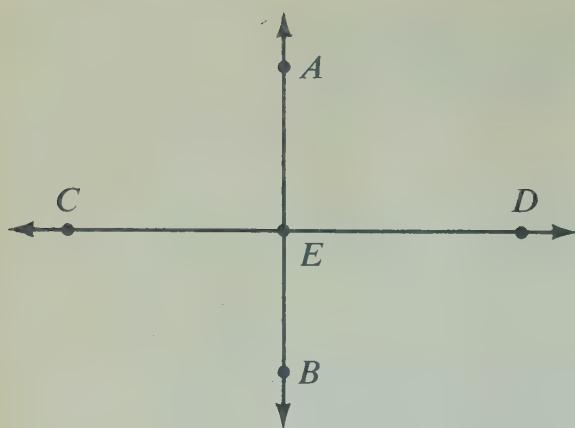
Study the first drawing. *Answers will vary. The lines and angles can be named in different ways.*

1. Name two lines. __CD__ __AB__

2. Name the point of intersection. __E__

3. Name four right angles.

  ∠CEA ∠AED ∠DEB ∠BEC

4. Name the perpendicular lines. __AB ⊥ CD__
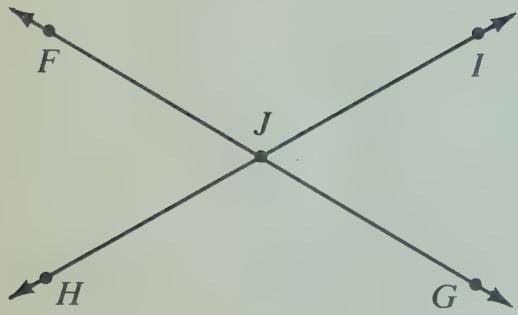
Study the second drawing. *Answers will vary.*

5. Name six line segments. __FJ__

  __JG__ __JI__ __HJ__ __FG__ __HI__

6. Name the congruent angles.

  ∠FJH and ∠IJG   ∠FJI and ∠HJG

7. Name the congruent line segments.

  FJ, JI, JG, JH are all congruent to each
  other.
  FG and HI are congruent.

8. Name the parallel lines.

  MR ∥ NS   KP ∥ QT

9. Name the perpendicular lines.
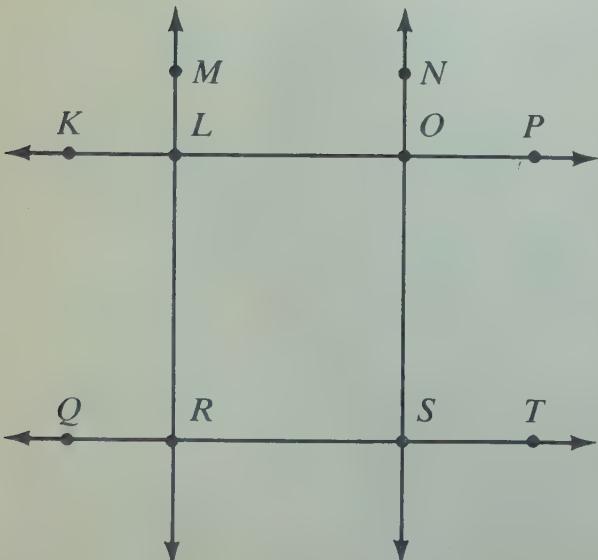
  MR ⊥ QT   MR ⊥ KP
  OS ⊥ KP   OS ⊥ RT

Study the third drawing. *Answers will vary.*

10. How many congruent angles? __16__

A *closed curve* is a curve that does not start or stop at any particular point. A *simple closed curve* has no points of intersection.

1. Draw five simple closed curves that are not congruent or similar.

Answers will vary.
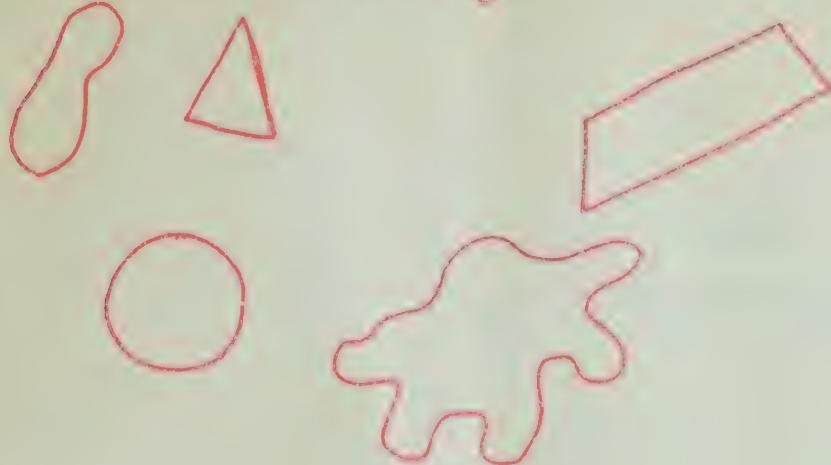
A simple closed curve made up of line segments is a *polygon.*

2. Draw five polygons that are not congruent or similar.
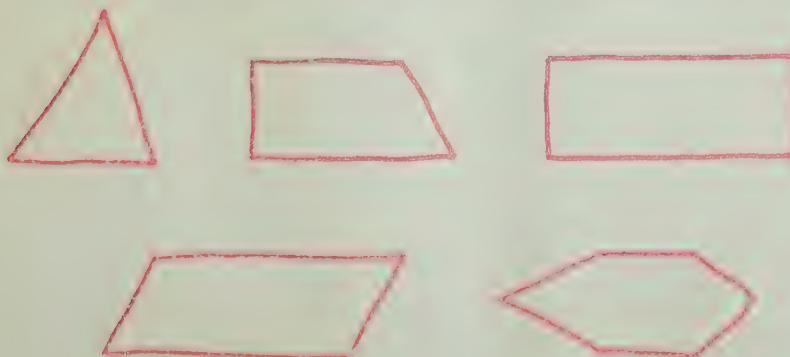
1. What is the name for any four-sided polygon? *Quadrilateral*

2. What is the name for any five-sided polygon? *Pentagon*

3. What is the name for any six-sided polygon? *Hexagon*

4. Using the geopaper below, draw and label the following polygons:

   Answers will vary.

   a   triangle *ABC*

   b   square *DEFG*

   c   pentagon *HIJKL*

   d   hexagon *MNOPQR*

   e   parallelogram *STUV* that is not a rectangle

   f   quadrilateral *WXYZ* that is not a parallelogram
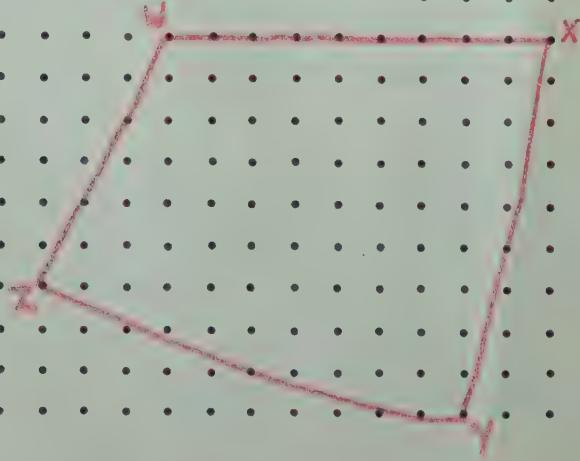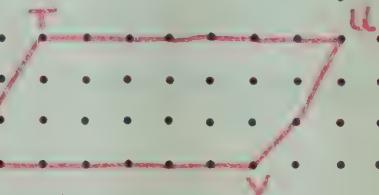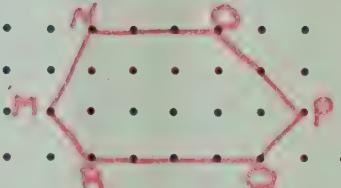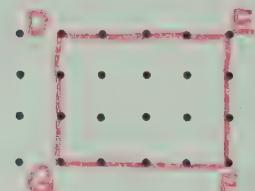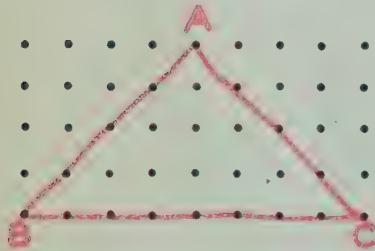
Look at the figures below. Write the letters of all the polygons that fit each description.

1. squares _____c, k_____

2. triangles _____i, p_____

3. parallelograms _c, d, k, m, n, o_

4. quadrilaterals _c, d, e, f, k, l, m, n, o_

5. rectangles _c, k, n, o_____

6. hexagons _b, j_____

7. pentagons _a, g, h_____

8. regular polygons _b, c, i, k_____

a

b

c

d

e

f

g

h

i

j

k

l

m

n

o

p
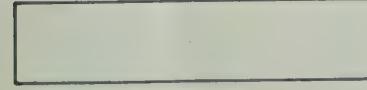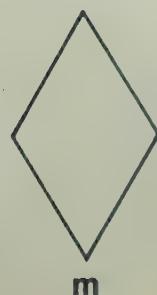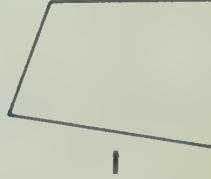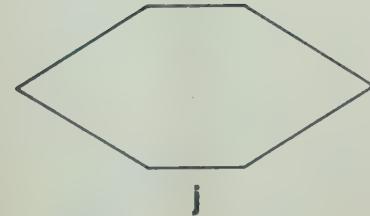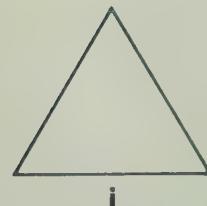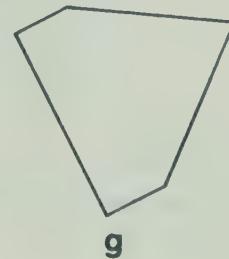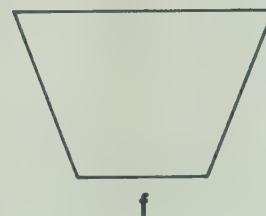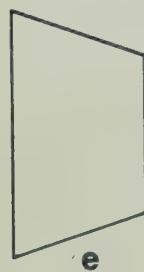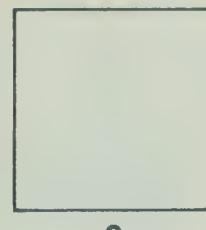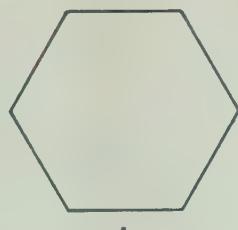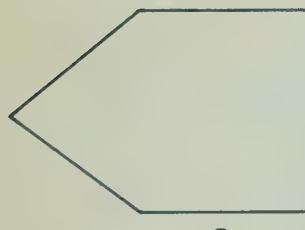
a Write a fraction to describe the shaded part of each set or region below.
b Then write a fraction to describe the unshaded part.

Example

a $\frac{1}{4}$
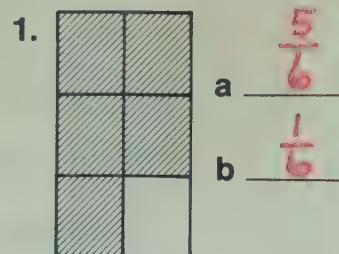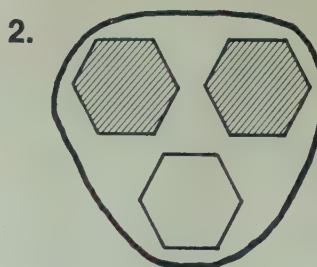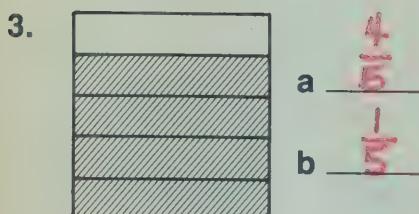
b $\frac{3}{4}$

1.

a $\frac{5}{6}$

b $\frac{1}{6}$

2.

a $\frac{2}{3}$

b $\frac{1}{3}$

3.

a $\frac{4}{5}$

b $\frac{1}{5}$

4.

a $\frac{1}{2}$

b $\frac{1}{2}$

5.

a $\frac{2}{9}$

b $\frac{7}{9}$

6.

a $\frac{4}{7}$

b $\frac{3}{7}$

7.

a $\frac{7}{8}$

b $\frac{1}{8}$

8.

a $\frac{2}{4}$

b $\frac{2}{4}$
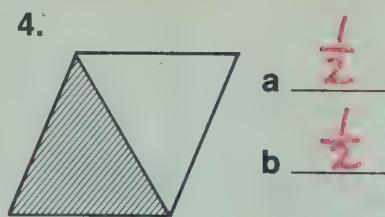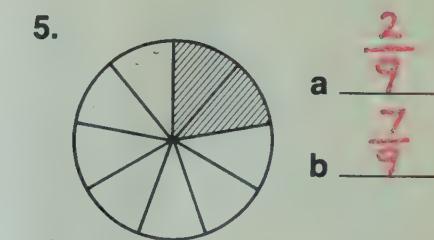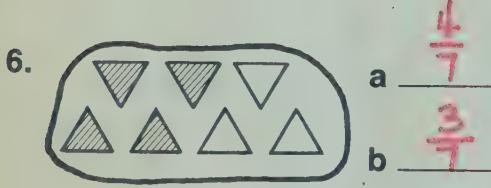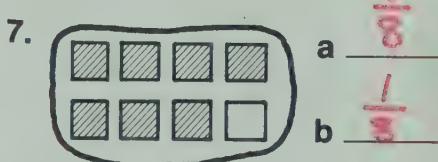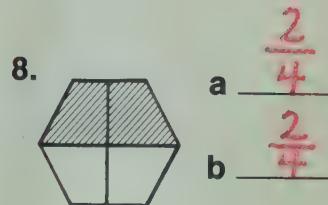
Draw sets of objects or regions divided into equal parts.
Shade enough of each set or region to show the following fractions.

9. $\frac{1}{4}$

10. $\frac{2}{3}$

11. $\frac{3}{8}$

12. $\frac{1}{2}$

13. $\frac{3}{4}$

14. $\frac{4}{5}$

15. $\frac{5}{6}$

16. $\frac{3}{10}$
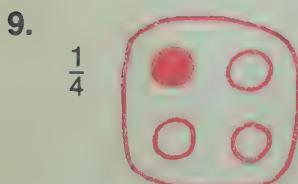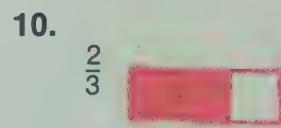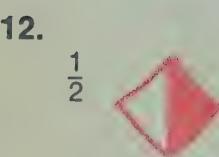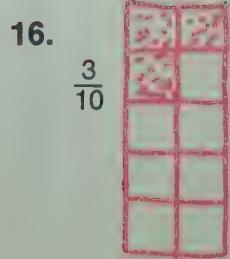
17. $\frac{1}{3}$

Write a fraction for each lettered point.

1.

a

0 — $\frac{1}{2}$ — 1

2.

a — b

0 — $\frac{1}{3}$ — $\frac{2}{3}$ — 1

3.

a — b — c

0 — $\frac{1}{4}$ — $\frac{2}{4}$ — $\frac{3}{4}$ — 1

4.

a — b — c — d — e

0 — $\frac{1}{6}$ — $\frac{2}{6}$ — $\frac{3}{6}$ — $\frac{4}{6}$ — $\frac{5}{6}$ — 1

5.

a — b — c — d — e — f — g — h — i — j — k

0 — $\frac{1}{12}$ — $\frac{2}{12}$ — $\frac{3}{12}$ — $\frac{4}{12}$ — $\frac{5}{12}$ — $\frac{6}{12}$ — $\frac{7}{12}$ — $\frac{8}{12}$ — $\frac{9}{12}$ — $\frac{10}{12}$ — $\frac{11}{12}$ — 1

6. Which is more?
Ring your answer.

a. $\boxed{\frac{1}{2}}$ or $\frac{1}{3}$ b. $\frac{2}{3}$ or $\boxed{\frac{3}{4}}$ c. $\boxed{\frac{3}{4}}$ or $\frac{4}{6}$ d. $\boxed{\frac{5}{6}}$ or $\frac{5}{12}$ e. $\boxed{\frac{2}{3}}$ or $\frac{6}{12}$

Match each picture on the left with a number line that shows the same fraction.

① _c_

② _d_

③ _a_

④ _e_

⑤ _b_

a

0 — 1 — 2

b

0 — 1

c

0 — 1

d

0 — 1

e

0 — 1 — 2 — 3
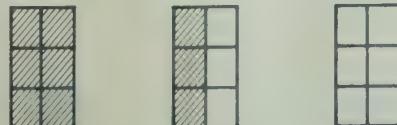
1. Write a fraction to describe the shaded part of each model below. The denominators are the same.

a   b   c   d   e   f

$\dfrac{1}{6}$ < $\dfrac{2}{6}$ < $\dfrac{3}{6}$ < $\dfrac{4}{6}$ < $\dfrac{5}{6}$ < $\dfrac{6}{6}$
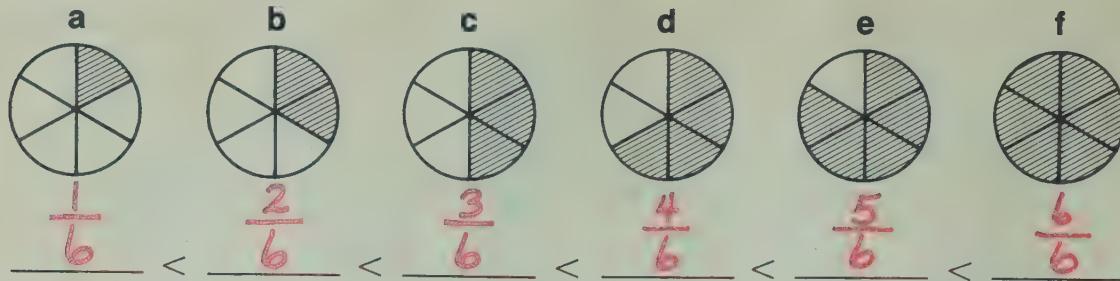
2. Write a fraction to describe the shaded part of each model below. The numerators are the same.

a   b   c   d   e   f

$\dfrac{2}{3}$ > $\dfrac{2}{4}$ > $\dfrac{2}{5}$ > $\dfrac{2}{6}$ > $\dfrac{2}{7}$ > $\dfrac{2}{8}$
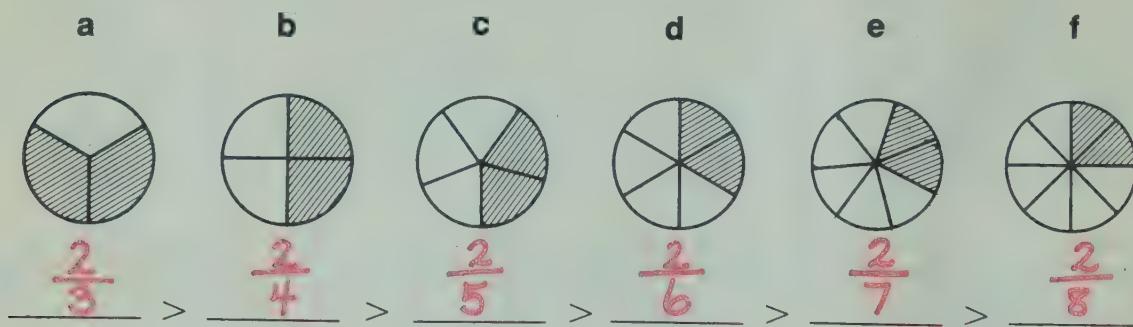
3. Write each set of fractions in order from largest to smallest.

a $\dfrac{4}{9}, \dfrac{4}{5}, \dfrac{4}{7}, \dfrac{4}{11}$ $\dfrac{4}{5}$ $\dfrac{4}{7}$ $\dfrac{4}{9}$ $\dfrac{4}{11}$ b $\dfrac{1}{5}, \dfrac{4}{5}, \dfrac{3}{5}, \dfrac{2}{5}$ $\dfrac{4}{5}$ $\dfrac{3}{5}$ $\dfrac{2}{5}$ $\dfrac{1}{5}$

c $\dfrac{5}{8}, \dfrac{3}{8}, \dfrac{7}{8}, \dfrac{0}{8}$ $\dfrac{7}{8}$ $\dfrac{5}{8}$ $\dfrac{3}{8}$ $\dfrac{0}{8}$ d $\dfrac{1}{7}, \dfrac{1}{5}, \dfrac{1}{4}, \dfrac{1}{3}$ $\dfrac{1}{3}$ $\dfrac{1}{4}$ $\dfrac{1}{5}$ $\dfrac{1}{7}$
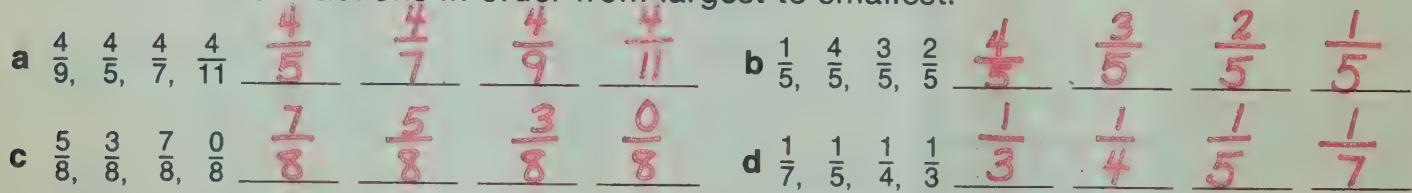
Compare each pair of fractions, using > or <.
Remember, > means "is greater than," and < means "is less than."

1. $\dfrac{2}{5}$ < $\dfrac{3}{5}$ 2. $\dfrac{1}{6}$ < $\dfrac{4}{6}$ 3. $\dfrac{5}{8}$ > $\dfrac{3}{8}$ 4. $\dfrac{1}{3}$ < $\dfrac{2}{3}$

5. $\dfrac{1}{4}$ < $\dfrac{3}{4}$ 6. $\dfrac{2}{5}$ > $\dfrac{2}{6}$ 7. $\dfrac{1}{3}$ > $\dfrac{1}{4}$ 8. $\dfrac{5}{6}$ < $\dfrac{4}{4}$

9. $3\dfrac{1}{2}$ > $3\dfrac{1}{3}$ 10. $1\dfrac{2}{5}$ > $1\dfrac{2}{7}$ 11. $4\dfrac{1}{5}$ > $4\dfrac{1}{6}$ 12. $2\dfrac{1}{8}$ < $2\dfrac{1}{2}$

13. $\dfrac{4}{5}$ > $\dfrac{1}{3}$ 14. $\dfrac{1}{4}$ < $\dfrac{7}{8}$ 15. $\dfrac{3}{8}$ < $\dfrac{1}{2}$ 16. $\dfrac{3}{5}$ > $\dfrac{1}{12}$

1. Ring the fractions that don't have their simplest names.

a $\frac{3}{4}$ b $\frac{2}{5}$ c $\left(\frac{4}{8}\right)$ d $\left(\frac{4}{6}\right)$ e $\left(\frac{6}{8}\right)$ f $\frac{1}{3}$

g $\left(\frac{3}{12}\right)$ h $\frac{5}{6}$ i $\left(\frac{2}{4}\right)$ j $\left(\frac{5}{10}\right)$ k $\frac{4}{9}$ l $\left(\frac{4}{16}\right)$

2. Copy any five of the fractions you picked in problem 1.
Write the simplest name for each. *answers will vary.*

a $\frac{4}{8} = \frac{1}{2}$ b $\frac{4}{6} = \frac{2}{3}$ c $\frac{6}{8} = \frac{3}{4}$ d $\frac{3}{12} = \frac{1}{4}$ e $\frac{2}{4} = \frac{1}{2}$

3. Write an equivalent fraction for each of the following. *answers will vary.*

a $\frac{1}{4} = \frac{2}{8}$ b $\frac{2}{5} = \frac{8}{20}$ c $\frac{1}{3} = \frac{2}{6}$ d $\frac{1}{2} = \frac{2}{4}$ e $\frac{3}{4} = \frac{9}{12}$

f $\frac{2}{3} = \frac{6}{9}$ g $\frac{7}{10} = \frac{49}{70}$ h $\frac{1}{6} = \frac{3}{18}$ i $\frac{5}{6} = \frac{10}{12}$ j $\frac{1}{5} = \frac{3}{15}$

Complete.

① $\frac{1}{4} = \frac{1 \times 3}{4 \times 3} = \frac{3}{12}$ ② $\frac{3}{5} = \frac{3 \times 2}{5 \times 2} = \frac{6}{10}$ ③ $\frac{2}{3} = \frac{2 \times 5}{3 \times 5} = \frac{10}{15}$

Find the common factors and complete.

④ $\frac{3}{6} = \frac{3 \div 3}{6 \div 3} = \frac{1}{2}$ ⑤ $\frac{8}{12} = \frac{8 \div 4}{12 \div 4} = \frac{2}{3}$ ⑥ $\frac{8}{18} = \frac{8 \div 2}{18 \div 2} = \frac{4}{9}$

Complete.

⑦ $\frac{3}{5} = \frac{12}{20}$ ⑧ $\frac{3}{10} = \frac{12}{40}$ ⑨ $\frac{1}{4} = \frac{8}{32}$ ⑩ $\frac{4}{7} = \frac{8}{14}$

Underline the pairs of equivalent fractions.

⑪ $\frac{1}{3}, \frac{6}{18}$ ⑫ $\frac{7}{10}, \frac{7}{70}$ ⑬ $\frac{8}{20}, \frac{2}{5}$ ⑭ $\frac{3}{5}, \frac{10}{15}$

Adding fractions
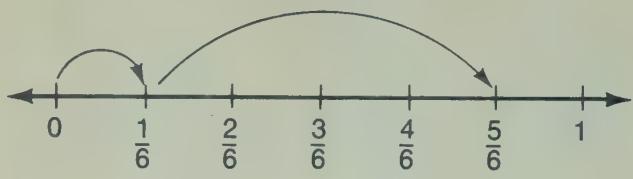
$$\frac{1}{6} + \frac{4}{6} = \frac{5}{6}$$

Subtracting fractions

$$\frac{5}{8} - \frac{2}{8} = \frac{3}{8}$$

Add.
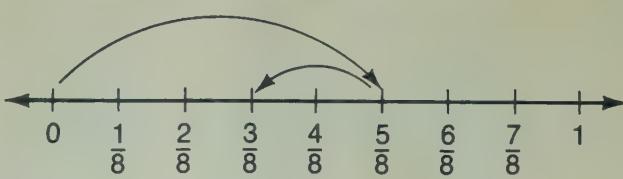
	a	b	c	d
1.	$\frac{3}{8} + \frac{2}{8} = \frac{5}{8}$	$\frac{1}{10} + \frac{1}{10} = \frac{2}{10} = \frac{1}{5}$	$\frac{1}{5} + \frac{2}{5} = \frac{3}{5}$	$\frac{3}{4} + \frac{1}{4} = \frac{4}{4} = 1$
2.	$\frac{1}{3} + \frac{2}{3} = \frac{3}{3} = 1$	$\frac{1}{6} + \frac{2}{6} = \frac{3}{6} = \frac{1}{2}$	$\frac{1}{7} + \frac{3}{7} = \frac{4}{7}$	$\frac{3}{8} + \frac{5}{8} = \frac{8}{8} = 1$
3.	$\frac{2}{5} + \frac{5}{5} = \frac{7}{5} = 1\frac{2}{5}$	$\frac{5}{10} + \frac{1}{10} = \frac{6}{10} = \frac{3}{5}$	$\frac{3}{8} + \frac{3}{8} = \frac{6}{8} = \frac{3}{4}$	$\frac{4}{9} + \frac{5}{9} = \frac{9}{9} = 1$
4.	$\frac{2}{6} + \frac{3}{6} = \frac{5}{6}$	$\frac{1}{10} + \frac{3}{10} = \frac{4}{10} = \frac{2}{5}$	$\frac{1}{2} + \frac{1}{2} = \frac{2}{2} = 1$	$\frac{4}{8} + \frac{6}{8} = \frac{10}{8} = 1\frac{1}{4}$

5. Go back. Rename each sum that can be given a simpler name.

Subtract.

	a	b	c	d
6.	$\frac{7}{8} - \frac{2}{8} = \frac{5}{8}$	$\frac{4}{5} - \frac{1}{5} = \frac{3}{5}$	$\frac{10}{10} - \frac{5}{10} = \frac{5}{10} = \frac{1}{2}$	$\frac{2}{4} - \frac{1}{4} = \frac{1}{4}$
7.	$\frac{1}{6} - \frac{0}{6} = \frac{1}{6}$	$\frac{4}{5} - \frac{2}{5} = \frac{2}{5}$	$\frac{5}{8} - \frac{1}{8} = \frac{4}{8} = \frac{1}{2}$	$\frac{3}{8} - \frac{1}{8} = \frac{2}{8} = \frac{1}{4}$
8.	$\frac{3}{4} - \frac{1}{4} = \frac{2}{4} = \frac{1}{2}$	$\frac{8}{9} - \frac{5}{9} = \frac{3}{9} = \frac{1}{3}$	$\frac{9}{10} - \frac{3}{10} = \frac{6}{10} = \frac{3}{5}$	$\frac{4}{5} - \frac{3}{5} = \frac{1}{5}$
9.	$\frac{5}{6} - \frac{1}{6} = \frac{4}{6} = \frac{2}{3}$	$\frac{5}{7} - \frac{1}{7} = \frac{4}{7}$	$\frac{5}{9} - \frac{2}{9} = \frac{3}{9} = \frac{1}{3}$	$\frac{7}{8} - \frac{1}{8} = \frac{6}{8} = \frac{3}{4}$

10. Go back. Rename each answer that can be given a simpler name.

Complete each sentence.

	a	b	c	d
1.	$\frac{1}{3} = \frac{3}{9}$	$\frac{1}{4} = \frac{4}{16}$	$\frac{2}{3} = \frac{10}{15}$	$\frac{3}{4} = \frac{9}{12}$
2.	$\frac{6}{8} = \frac{3}{4}$	$\frac{4}{12} = \frac{1}{3}$	$\frac{2}{10} = \frac{4}{20}$	$\frac{2}{4} = \frac{1}{2}$
3.	$\frac{6}{9} = \frac{18}{27}$	$\frac{7}{14} = \frac{1}{2}$	$\frac{5}{6} = \frac{15}{18}$	$\frac{2}{8} = \frac{4}{16}$

Add or subtract.

	a	b	c	d
4.	$\frac{4}{5} - \frac{1}{5} = \frac{3}{5}$	$\frac{3}{8} - \frac{1}{8} = \frac{2}{8} = \frac{1}{4}$	$\frac{1}{3} + \frac{1}{3} = \frac{2}{3}$	$\frac{3}{8} + \frac{2}{8} = \frac{5}{8}$
5.	$\frac{9}{10} - \frac{3}{10} = \frac{6}{10} = \frac{3}{5}$	$\frac{1}{4} + \frac{3}{4} = \frac{4}{4} = 1$	$\frac{5}{6} + \frac{5}{6} = \frac{10}{6} = \frac{5}{3} = 1\frac{2}{3}$	$\frac{5}{12} - \frac{1}{12} = \frac{4}{12} = \frac{1}{3}$
6.	$\frac{2}{3} - \frac{1}{3} = \frac{1}{3}$	$\frac{2}{5} + \frac{2}{5} = \frac{4}{5}$	$\frac{8}{9} - \frac{5}{9} = \frac{3}{9} = \frac{1}{3}$	$\frac{5}{6} - \frac{1}{6} = \frac{4}{6} = \frac{2}{3}$

7. Go back. Rename each answer that can be given a simpler name.

Complete these sentences.

① $\frac{1}{5} = \frac{2}{10}$ ② $\frac{2}{3} = \frac{4}{6}$ ③ $\frac{1}{2} = \frac{2}{4}$ ④ $\frac{3}{5} = \frac{9}{15}$

⑤ $\frac{2}{6} = \frac{1}{3}$ ⑥ $\frac{4}{12} = \frac{1}{3}$ ⑦ $\frac{5}{10} = \frac{1}{2}$ ⑧ $\frac{6}{8} = \frac{3}{4}$

Add.

⑨ $\frac{3}{5} + \frac{1}{5} = \frac{4}{5}$ ⑩ $\frac{2}{7} + \frac{5}{7} = \frac{7}{7} = 1$ ⑪ $\frac{2}{9} + \frac{4}{9} = \frac{6}{9} = \frac{2}{3}$ ⑫ $\frac{1}{4} + \frac{1}{4} = \frac{2}{4} = \frac{1}{2}$

Subtract.

⑬ $\frac{5}{8} - \frac{3}{8} = \frac{2}{8} = \frac{1}{4}$ ⑭ $\frac{2}{3} - \frac{1}{3} = \frac{1}{3}$ ⑮ $\frac{3}{5} - \frac{3}{5} = \frac{0}{5} = 0$ ⑯ $\frac{5}{6} - \frac{2}{6} = \frac{3}{6} = \frac{1}{2}$

Add or subtract.

	a	b	c	d

1. $\frac{3}{12} + \frac{5}{12} = \frac{8}{12} = \frac{2}{3}$ $\frac{1}{6} + \frac{1}{6} = \frac{2}{6} = \frac{1}{3}$ $\frac{3}{4} - \frac{1}{4} = \frac{2}{4} = \frac{1}{2}$ $\frac{1}{5} + \frac{2}{5} = \frac{3}{5}$

2. $\frac{6}{8} - \frac{2}{8} = \frac{4}{8} = \frac{1}{2}$ $\frac{3}{10} + \frac{7}{10} = \frac{10}{10} = 1$ $\frac{4}{5} - \frac{2}{5} = \frac{2}{5}$ $\frac{8}{12} - \frac{2}{12} = \frac{6}{12} = \frac{1}{2}$

3. Go back. Rename each answer that can be given a simpler name.

4. Write the missing numerators. Use >, <, or = to complete each sentence.

a $\frac{1}{2} = \frac{3}{6}$ and $\frac{2}{3} = \frac{4}{6}$, so $\frac{1}{2} \;<\; \frac{2}{3}$ **b** $\frac{1}{3} = \frac{5}{15}$ and $\frac{2}{5} = \frac{6}{15}$, so $\frac{1}{3} \;<\; \frac{2}{5}$

c $\frac{5}{6} = \frac{10}{12}$ and $\frac{3}{4} = \frac{9}{12}$, so $\frac{5}{6} \;>\; \frac{3}{4}$ **d** $\frac{3}{4} = \frac{9}{12}$ and $\frac{2}{3} = \frac{8}{12}$, so $\frac{3}{4} \;>\; \frac{2}{3}$

---

1. Compare the following pairs of fractions using > or <.

a $\frac{1}{3} \;<\; \frac{2}{3}$ **b** $\frac{3}{4} \;>\; \frac{3}{8}$ **c** $\frac{1}{6} \;>\; \frac{1}{9}$ **d** $\frac{2}{4} \;<\; \frac{3}{4}$

e $\frac{2}{5} \;<\; \frac{4}{5}$ **f** $\frac{1}{2} \;<\; \frac{2}{2}$ **g** $\frac{5}{6} \;>\; \frac{5}{8}$ **h** $\frac{1}{8} \;<\; \frac{1}{5}$

2. Add or subtract. Write the simplest name for each answer.

a $\frac{3}{8} + \frac{2}{8} = \frac{5}{8}$ **b** $\frac{7}{9} - \frac{3}{9} = \frac{4}{9}$ **c** $\frac{1}{3} + \frac{2}{3} = \frac{3}{3} = 1$ **d** $\frac{3}{12} + \frac{5}{12} = \frac{8}{12} = \frac{2}{3}$

e $\frac{3}{4} - \frac{1}{4} = \frac{2}{4} = \frac{1}{2}$ **f** $\frac{5}{6} - \frac{1}{6} = \frac{4}{6} = \frac{2}{3}$ **g** $\frac{6}{8} + \frac{3}{8} = \frac{9}{8} = 1\frac{1}{8}$ **h** $\frac{8}{12} - \frac{7}{12} = \frac{1}{12}$

3. Complete each sentence.

a $\frac{2}{3} = \frac{4}{6}$ **b** $\frac{8}{10} = \frac{4}{5}$ **c** $\frac{8}{10} = \frac{16}{20}$ **d** $\frac{4}{12} = \frac{1}{3}$

e $\frac{12}{12} = \frac{4}{4}$ **f** $\frac{2}{5} = \frac{6}{15}$ **g** $\frac{1}{4} = \frac{3}{12}$ **h** $\frac{5}{6} = \frac{15}{18}$

Write each product.

	a	b	c	d
1.	$6 \times 9 =$ _54_	$4 \times 7 =$ _28_	$9 \times 5 =$ _45_	$10 \times 80 =$ _800_
2.	$6 \times 90 =$ _540_	$4 \times 70 =$ _280_	$9 \times 50 =$ _450_	$10 \times 800 =$ _8000_

Complete the math sentences. Write the quotients.

       a   b   c   d

3. _6_ $\times 50 = 300$ _9_ $\times 20 = 180$ _6_ $\times 60 = 360$ _7_ $\times 80 = 560$

    $50\overline{)300}$ → 6 $20\overline{)180}$ → 9 $60\overline{)360}$ → 6 $80\overline{)560}$ → 7

4. _6_ $\times 70 = 420$ _9_ $\times 30 = 270$ _9_ $\times 80 = 720$ _4_ $\times 40 = 160$

    $70\overline{)420}$ → 6 $30\overline{)270}$ → 9 $80\overline{)720}$ → 9 $40\overline{)160}$ → 4

Write each quotient.

       a   b   c   d

5. $40\overline{)320}$ → 8 $70\overline{)490}$ → 7 $30\overline{)180}$ → 6 $50\overline{)250}$ → 5

6. $90\overline{)630}$ → 7 $60\overline{)240}$ → 4 $50\overline{)500}$ → 10 $80\overline{)480}$ → 6

Estimate the quotients.

       a   b   c   d

① $10\overline{)30}$ → 3 $10\overline{)300}$ → 30 $10\overline{)3000}$ → 300 $10\overline{)30000}$ → 3000

② $20\overline{)200}$ → 10 $30\overline{)200}$ → 6 $40\overline{)200}$ → 5 $50\overline{)200}$ → 4

③ $60\overline{)210}$ → 3 $60\overline{)230}$ → 3 $60\overline{)250}$ → 4 $60\overline{)270}$ → 4

Estimate the quotients. Write > or < in each circle.

	a	b	c
1.	100 ÷ 20 $<$ 10	300 ÷ 20 $>$ 10	236 ÷ 11 $>$ 10
2.	245 ÷ 7 $>$ 10	245 ÷ 70 $<$ 10	853 ÷ 42 $>$ 10

Estimate the quotients. Write > or < in the circle.

	a	b	c
3.	565 ÷ 5 $>$ 100	565 ÷ 60 $<$ 100	1005 ÷ 10 $>$ 100
4.	400 ÷ 3 $>$ 100	400 ÷ 30 $<$ 100	7930 ÷ 88 $<$ 100

Complete this table.

	Problem	Rounded division	Multiplication step	Estimated quotient
5.	9)205	10)205	20 × 10 = 200 30 × 10 = 300	20
6.	12)660	10)660	60 × 10 = 600 70 × 10 = 700	60
7.	38)1950	40)1950	40 × 40 = 1600 50 × 40 = 2000	40
8.	38)19500	40)19500	400 × 40 = 16 000 500 × 40 = 20 000	400

Write four division problems with quotients between 1 and 10.
Make each divisor a 2-digit number. *Answers will vary.*

	a	b	c	d
9.	23)159	14)127	54)493	36)222

Write four division problems with quotients between 10 and 100.
Make each divisor a 2-digit number. *Answers will vary.*

	a	b	c	d
10.	23)1590	17)176	47)1600	15)1000

Name the largest whole number that will make the sentence true.

a	b	c
1. _7_ × 4 < 29	_9_ × 6 < 57	_8_ × 5 < 42
29 ÷ 4 > _7_	57 ÷ 6 > _9_	42 ÷ 5 > _8_
2. _5_ × 30 < 174	_7_ × 70 < 530	_7_ × 90 < 648
174 ÷ 30 > _5_	530 ÷ 70 > _7_	648 ÷ 90 > _7_
3. _7_ × 23 < 165	_3_ × 38 < 120	_9_ × 17 < 155
165 ÷ 23 > _7_	120 ÷ 38 > _3_	155 ÷ 17 > _9_

Write the largest multiple of ten that will make the sentence true.

a	b	c
4. _20_ × 8 < 163	_50_ × 4 < 204	_40_ × 9 < 365
163 ÷ 8 > _20_	204 ÷ 4 > _50_	365 ÷ 9 > _40_
5. _30_ × 20 < 610	_60_ × 80 < 5000	_30_ × 30 < 952
610 ÷ 20 > _30_	5000 ÷ 80 > _60_	952 ÷ 30 > _30_
6. _40_ × 21 < 861	_70_ × 14 < 996	_50_ × 11 < 555
861 ÷ 21 > _40_	996 ÷ 14 > _70_	555 ÷ 11 > _50_

Divide.

a	b	c	d
7. $16\overline{)368}$ → 23	$24\overline{)295}$ → 12 R7	$45\overline{)765}$ → 17	$31\overline{)3724}$ → 120 R4

Estimate the quotient. Then complete the division.

	a	**b**	**c**

1. Estimated quotient $\big\{$ > __200__ < __300__

Estimated quotient $\big\{$ > __40__ < __50__

Estimated quotient $\big\{$ > __200__ < __300__

```
      230
       30
      200
  25)5750
     5000 ( 200× 25)
      750
      750 ( 30 × 25)
        0
```

```
       47
        7
       40
   16)752
      640 ( 40 × 16)
      112
      112 ( 7 × 16)
        0
```

```
     210 R5
      10
     200
  32)6725
     6400 ( 200× 32)
      325
      320 ( 10 × 32)
        5
```

Divide.

a	**b**	**c**

2.
```
     142 R21
  27)3855
```

```
      56 R3
  12)675
```

```
       7
  75)525
```

3.
```
      84 R32
  83)7004
```

```
      63 R68
  90)5738
```

```
     202 R7
  15)3037
```

Find the answers.

1. There are 728 fish at the pet shop. There are 13 big tanks with an equal number of fish in each tank. How many fish are in each tank? **56 fish**

2. The Stitchem Coat Company made 5400 girls' jackets. They were divided into equal batches for 18 stores. How many did each store get?
   300 jackets

Divide.

① $4\overline{)27}$ **6 R3**

② $30\overline{)905}$ **30 R5**

③ $70\overline{)4900}$ **70**

④ $40\overline{)8000}$ **200**

⑤ $50\overline{)630}$ **12 R30**

⑥ $8\overline{)0}$ **0**

⑦ $24\overline{)8088}$ **337**

⑧ $31\overline{)1987}$ **64 R3**

Divide.

a	b	c	d

1. $10\overline{)500}$ **50** $10\overline{)5000}$ **500** $60\overline{)240}$ **4** $60\overline{)2400}$ **40**

2. $47\overline{)240}$ **5R5** $33\overline{)1063}$ **32 R7** $42\overline{)1378}$ **32 R34** $75\overline{)5400}$ **72**

3. $28\overline{)2416}$ **86R8** $53\overline{)3392}$ **64** $43\overline{)2752}$ **64** $69\overline{)3849}$ **55 R54**

4. $29\overline{)6150}$ **212 R2** $78\overline{)8756}$ **112 R20** $35\overline{)5683}$ **162 R13** $19\overline{)11026}$ **580 R6**

Estimate the quotient. Then complete the division.

a	b	c

1. Estimated $\Big\}$ > __60__   Estimated $\Big\}$ > __20__   Estimated $\Big\}$ > __200__

quotient $\Big\}$ < __70__   quotient $\Big\}$ < __30__   quotient $\Big\}$ < __300__

a

$$
\begin{array}{r}
\underline{63} \\
3 \\
\underline{60} \\
150\overline{)9450} \\
\underline{9000} \ (\,\underline{60}\times 150) \\
450 \\
\underline{450} \ (\,\underline{3}\times 150) \\
0
\end{array}
$$

b

$$
\begin{array}{r}
\underline{25} \ R151 \\
5 \\
\underline{20} \\
240\overline{)6151} \\
\underline{4800} \ (\,\underline{20}\times 240) \\
1351 \\
\underline{1200} \ (\,\underline{5}\times 240) \\
151
\end{array}
$$

c

$$
\begin{array}{r}
\underline{248} \\
8 \\
\underline{40} \\
\underline{200} \\
370\overline{)91760} \\
\underline{74000} \ (\,\underline{200}\times 370) \\
17760 \\
\underline{14800} \ (\,\underline{40}\times 370) \\
2960 \\
\underline{2960} \ (\,\underline{8}\times 370) \\
0
\end{array}
$$

Divide.

a	b	c

2.
$$320\overline{)9600} \quad \overset{30}{}$$
$$280\overline{)4760} \quad \overset{17}{}$$
$$410\overline{)9485} \quad \overset{23\,R55}{}$$

3.
$$160\overline{)12000} \quad \overset{75}{}$$
$$630\overline{)81270} \quad \overset{129}{}$$
$$590\overline{)32460} \quad \overset{55\,R10}{}$$

| | a | b | c |

1. Does 180 ÷ 12 = 15? *Yes*   Does 345 ÷ 17 = 20? *No*   Does 1148 ÷ 28 = 41? *Yes*

Check: 1 5   Check: 2 0   Check: 4 1
         × 1 2   × 1 7   × 2 8
          30   140   328
         150   200   820
         180   340   1148

2. Does 64 ÷ 9 = 7 R1? *Yes*   Does 325 ÷ 10 = 32 R5? *Yes*   Does 414 ÷ 23 = 180? *No*

Check: 7   Check: 32   Check: 180
         × 9   ×10   ×23
          63   320   540
         + 1   + 5   3600
          64   325   4140

Divide and check.

① 75)1085   14 R35   75
                          ×14
                          300
                          750
                         1050
                        + 35
                         1085

② 65)2795   43   43
                      ×65
                      215
                     2580
                     2795

③ 28)1988   71   71
                      ×28
                      568
                     1420
                     1988

④ 300)3615 12 R15   300
                      ×12
                      600
                     3000
                     3600
                    + 15
                     3615

Long division	Short division		
	Step 1 ⟹	Step 2 ⟹	Step 3
73 R1	(7 tens × 26 = 182 tens)	(3 × 26 = 78)	(show remainder)

```
        73 R1
         3
        70
26) 1899
   1820
     79
     78
      1
```

Step 1
```
     7
26) 1899
   182
     7
```

Step 2
```
    73
26) 1899
   182
    79
    78
     1
```

Step 3
```
    73 R1
26) 1899
   182
    79
    78
     1
```

Complete the short division. Look at the long form for help.

a

```
      44
       4
      40
1. 67) 2948
     2680
      268
      268
        0
```

```
      44
67) 2948
```

```
     31 R3
      1
     30
312) 9675
    9360
     315
     312
       3
```

b

```
     31 R3
312) 9675
```

Divide. Use the shorter method.

   a   **b**   **c**   **d**

```
      26              14 R41           44 R6            24
2. 25) 650      56) 825         67) 2954        53) 1272
```

```
     345             21 R4            31 R6            64 R12
3. 21) 7245     21) 445         31) 967         43) 2764
```

1. Round to the nearest ten.

	a	b	c	d
	47 _**50**_	123 _**120**_	972 _**970**_	3789 _**3790**_

2. Round to the nearest hundred.

	a	b	c	d
	231 _**200**_	389 _**400**_	1271 _**1300**_	1550 _**1600**_

3. There are 732 chairs.
Round to the nearest hundred.

_**700**_

4. There are 1683 stamps.
Round to the nearest hundred.

_**1700**_

5. Estimate answers. Show what you did to get an estimate.

a 6 × 98 _**600**_ 6×100

b 19 × 37 _**800**_ 20×40

c $4\overline{)795}$ _**200**_ $4\overline{)800}$

d $49\overline{)186}$ _**4**_ $50\overline{)200}$

e $37\overline{)118}$ _**3**_ $40\overline{)120}$

f $98\overline{)1992}$ _**20**_ $100\overline{)2000}$

6. Estimate. Divide. Check.

a Estimated
answer: $40\overline{)240}$ **6**
(**6**)

Check:
$$40 \times 6 = 240$$

b Estimated
answer: $41\overline{)246}$ **6**
(**6**)

Check:
$$41 \times 6 = 246$$

c Estimated
answer: $63\overline{)7250}$ **115 R5**
(**100**)

Check:
115
×63
345
6900
7245
+ 5
7250

d Estimated
answer: $28\overline{)2416}$ **86 R8**
(**80**)

Check: 86
×28
688
1720
2408
8
2416

e Estimated
answer: $72\overline{)2810}$ **39 R2**
(**40**)

Check:
39
×72
78
2730
2808
+ 2
2810

f Estimated
answer: $11\overline{)4950}$ **450**
(**500**)

Check:
450
×11
450
4500
4950

Write + or − to make each sentence true.

	a		b

1. 10 **+** 10 = 16 **+** 4   6 **+** 16 = 7 **+** 15

2. 24 **−** 9 = 9 **+** 6   25 **−** 4 = 15 **+** 6

Write +, −, ×, or ÷ to make each sentence true.

a   **b**

3. 8 **−** 5 = 10 **−** 7   13 **−** 5 = 24 **÷** 3

4. 10 **+** 3 = 20 **−** 7   3 **×** 6 = 23 **−** 5

5. 2 **×** 4 = 16 **÷** 2   10 **÷** 10 = 20 **−** 19

6. 30 **÷** 5 = 36 **÷** 6   16 **÷** 4 = 2 **×** 2

7. 3 **+** 7 = 5 **×** 2   25 **÷** 5 = 1 **×** 5

8. 18 **−** 14 = 24 **÷** 6   6 **×** 5 = 3 **×** 10

Write >, <, or = to make each sentence true.

a	b	c	d

9. 5 **<** 9 $\frac{3}{12}$ **>** $\frac{1}{6}$ 59 **<** $81\frac{1}{2}$ $2\frac{3}{4}$ **=** $\frac{11}{4}$

10. $\frac{5}{6}$ **>** 0 $\frac{5}{8}$ **<** $\frac{3}{4}$ 1 **=** $\frac{5}{5}$ $\frac{7}{2}$ **>** $2\frac{1}{2}$

Write a math sentence for each problem.

11. A show costs $3.00.
69 people see it.
How much money should
the box office take in?

$69 \times \$3.00 = \$207.00$

12. Another show costs $2.75.
You pay $5.00.
What change do you receive?

$\$5.00 - \$2.75 = \$2.25$

14. Your family drives 724 km in one day.
The next day you go 603 km .
How many kilometres do you drive
in two days?

$724 + 603 = 1327 \text{ km}$

13. A book has 128 pages.
You have read 63 pages.
How many pages are left to read?

$128 - 63 = 65 \text{ pages}$

15. You have $10.00.
You buy a gift that costs $6.95.
How much money do you have left?

$\$10.00 - \$6.95 = \$3.05$

16. In an hour you bicycle 13 km .
You ride 3 h at this rate.
How many kilometres do you travel?

$13 \times 3 = 39 \text{ km}$

48

Which sentences are true? Which are false? Ring T or F.

	a			**b**	
1. $7 + 4 = 11$	(T)	F	$21 \div 3 = 2 + 5$	(T)	F
2. $12 - 6 = 6$	(T)	F	$20 \times 10 = 2 \times 100$	(T)	F
3. $32 \div 4 = 6$	T	(F)	$10 + 3 = 22 - 9$	(T)	F
4. $9 \times 9 = 81$	(T)	F	$64 \div 8 = 27 \div 3$	T	(F)
5. $16 - 4 < 4$	T	(F)	$9 \times 6 < 100 - 40$	(T)	F

6. The sentence $30 + n = 70$ is an open sentence. *Answers will vary.*

    a Make $30 + \boxed{40} = 70$ true.   **b** Make $30 + \boxed{55} = 70$ false.

7. The sentence $10 \div 5 = n$ is an open sentence. *(any number but 40)*

    a Make $10 \div 5 = \boxed{2}$ true.   **b** Make $10 \div 5 = \boxed{3}$ false.

8. The sentence $n < 8 \times 5$ is an open sentence. *(any number but 2)*

    a Make $\boxed{39} < 8 \times 5$ true.   **b** Make $\boxed{46} < 8 \times 5$ false.

(any number less than 40)   *(any number greater than or equal to 40)*

Make each sentence true.

	a	**b**	**c**
9.	$9 + 8 = \boxed{17}$	$16 - 7 = \boxed{9}$	$3 + 7 = 12 - \boxed{2}$
10.	$\boxed{4} + 7 = 11$	$\boxed{10} - 5 = 5$	$\boxed{19} - 10 = 5 + 4$
11.	$9 \times \boxed{6} = 54$	$49 \div \boxed{7} = 7$	$72 \div \boxed{9} = 4 \times 2$
12.	$20 + 30 > \boxed{46}$	$100 - \boxed{60} < 50$	$38 \times 10 < \boxed{500}$

13. A teacher had 25 students. She gave each student 4 sheets of paper.

She handed out 100 sheets of paper. True or false? _True_

Write a math sentence to back up your answer. _$25 \times 4 = 100$_

14. There are 7 class periods in a school day. Each class lasts 40 min.

There are 5 h of classes in a school day. True or false? _False_

Write a math sentence to back up your answer. _$7 \times 40 \neq 5 \times 60$_
or $7 \times 40 < 5 \times 60$

15. There are 3 swing sets on the playground. There are 9 swings in each set.

30 children can swing at the same time. True or false? _False_

Write a math sentence to back up your answer. _$3 \times 9 < 30$_

Write >, <, or = to make each sentence true.

	a	b	c
1.	5 + 3 $>$ 7	5 + 3 $=$ 8	5 + 3 $<$ 9
2.	13 − 4 $>$ 7	13 − 5 $=$ 8	13 − 6 $<$ 9
3.	4 × 3 $>$ 10	4 × 3 $>$ 11	4 × 3 $=$ 12
4.	30 + 40 $=$ 70	30 + 40 $<$ 80	30 + 40 $<$ 90
5.	50 − 10 $>$ 30	50 − 20 $<$ 40	50 − 30 $<$ 50
6.	10 × 10 $=$ 100	10 × 100 $=$ 1000	100 × 100 $>$ 1000
7.	87 + 22 $>$ 100	87 + 22 $<$ 110	87 + 22 $<$ 120
8.	95 − 30 $>$ 60	95 − 40 $<$ 60	95 − 50 $=$ 45
9.	29 × 10 $>$ 200	29 × 10 $<$ 900	29 × 10 $>$ 90

Write a solution for the open sentence.   *Answers will vary.*

	a	b	c
10.	7 + n = 15	8 + n > 14	5 + n < 11
	solution __8__	solution __7__	solution __4__
11.	40 + n = 150	90 + n > 120	80 + n > 160
	solution __110__	solution __40__	solution __90__
12.	32 + n = 150	51 + n > 76	98 + n < 256
	solution __118__	solution __26__	solution __100__
13.	536 + n = 563	445 + n > 1000	842 + n < 2500
	solution __27__	solution __600__	solution __1000__
14.	$\frac{5}{8} + n = \frac{7}{8}$ solution __$\frac{2}{8}$__	$\frac{1}{5} + n > \frac{3}{5}$ solution __$\frac{3}{5}$__	$\frac{1}{6} + n < \frac{5}{6}$ solution __$\frac{2}{6}$__
15.	$\frac{5}{6} + n = \frac{6}{6}$ solution __$\frac{1}{6}$__	$\frac{2}{5} + n < \frac{5}{5}$ solution __$\frac{1}{5}$__	$\frac{1}{6} + n > \frac{5}{6}$ solution __1__
16.	198 + n = 205 solution __7__	17 + n < 18 solution __0__	$\frac{3}{5} + n > \frac{4}{5}$ solution __$\frac{3}{5}$__

Write the solution for each sentence.

1. $359 + 327 = n$

solution __686__

2. $170 + 589 = n$

solution __759__

3. $441 + 677 = n$

solution __1118__

4. $418 + n = 664$

solution __246__

5. $608 + n = 1594$

solution __986__

6. $468 + n = 596$

solution __128__

7. $579 + n = 825$

solution __246__

8. $238 + n = 503$

solution __265__

9. $658 + n = 1338$

solution __680__

Find the solution.

① $425 + n = 750$

solution __325__

② $839 + n = 998$

solution __159__

③ $356 + n = 885$

solution __529__

④ $253 + n = 861$

solution __608__

⑤ $641 + n = 670$

solution __29__

⑥ $768 + n = 900$

solution __132__

⑦ $485 + n = 639$

solution __154__

⑧ $553 + n = 700$

solution __147__

Write *true*, *false*, or *open* to describe each math sentence.

⑨ $9 \times 4 < 35$ _false_   ⑩ $6 + 9 > 16$ _false_   ⑪ $60 < 9 \times 7$ _true_

⑫ $64 \div n = 8$ _open_   ⑬ $435 - 117 = 318$ _true_   ⑭ $7 \times 6 = 52$ _false_

⑮ $7 \times 17 < 120$ _true_   ⑯ $18 \times n = 45$ _open_

Solve these word problems.
Write a true sentence on each line to show the right answer.

1. There were 30 tents.
8 scouts slept in each tent.
How many scouts slept in tents?

$30 \times 8 = 240$ scouts

2. A bicycle rack holds 25 bikes.
6 spaces are empty.
How many bikes are in the rack?

$25 - 6 = 19$ bikes

3. 12 000 cans were recycled last week.
18 500 cans were recycled this week.
How many cans were recycled in all?

$12\,000 + 18\,500 = 30\,500$ cans

4. Your friend scores 165 points.
You score 45 fewer points.
What is your score?

$165 - 45 = 120$ points

5. 216 students go on a trip.
They split into 8 equal-sized groups.
How many students are in each group?

$216 \div 8 = 27$ students

6. Tickets cost $2.00.
370 tickets are sold.
How much money is collected?

$370 \times \$2.00 = \$740.00$

7. You bicycle 96 km today.
You bicycle 87 km the next day.
What is your total distance?

$96 + 87 = 183$ km

8. You play 56 games.
You win 31. (No tie games.)
How many do you lose?

$56 - 31 = 25$ games lost

9. You bicycle 20 km and rest.
You bicycle another 30 km and stop.
What is your total distance?

$20 + 30 = 50$ km

10. 61 children come to play.
Each team needs 9 players.
How many teams can be formed?

$61 \div 9 = 6 R7$ so 6 teams can be formed

11. It is 225 km to Sandy Beach.
The bus has gone 166 km.
How many kilometres remain?

$225 - 166 = 59$ km

12. $54.00 is divided equally among
3 people.
What is your share?

$\$54.00 \div 3 = \$18.00$

Write a story for each math sentence. Solve the sentence. *Stories will vary.*

1. $27 + 36 = n$ solution _63_

_____

_____

_____

2. $4 \times 6 = n$ solution _24_

_____

_____

_____

3. $75 + n = 150$ solution _75_

_____

_____

_____

4. $56 \div 8 = n$ solution _7_

_____

_____

_____

5. $n - 26 = 68$ solution _94_

_____

_____

_____

Match each story with the pair of sentences that describes it.
Then find the solution.

1. A team scored 3 goals.
   Each goal counts 6 points.
   The team scored 2 extra points.
   What was the team's total score?

   ___b___ solution 20 points,

2. 3 cartons of bottles are returned.
   There are 6 bottles in each carton.
   2¢ is paid for each bottle.
   How much money is paid for the bottles?

   ___c___ solution ___36¢___

3. There are 6 boxes of balls.
   Each box contains 3 balls.
   The balls are shared equally by 2 people.
   How many balls does each one get?

   ___a___ solution 9 balls

a $6 \times 3 = 18$
    $18 \div 2 = n$

b $3 \times 6 = 18$
    $18 + 2 = n$

c $3 \times 6 = 18$
    $18 \times 2 = n$

Solve the following problems.
Write two true math sentences to help answer each question.

4. You need $5.00 for a magazine subscription.
   You earn $1.85 one day and $2.55 the next day.
   How much more do you need to earn?

   $\$1.85 + \$2.55 = \$4.40$ $\$5.00 - \$4.40 = \$0.60$

5. A jogger runs for 20 min every summer's day.
   His goal is to run 10 h a month.
   Will he reach his goal at this rate?
   (Ring one: (yes)   no)

   $20 \times 30 = 600$ min $600 \div 60 = 10$ h
   or $20 \times 31 = 620$ min $620 \div 60 = 10$ h 20 min

Match each problem with a math sentence that describes it.

1. 8 pencils at 5¢ each. How much in all? _c_   **a** $40 \div 5 = n$

2. 5 stamps cost 40¢. How much for each? _a_   **b** $40 - 5 = n$

3. 8 girls and 5 boys. How many children in all? _d_   **c** $8 \times 5 = n$

4. 40 marbles. 5 get lost. How many left? _b_   **d** $8 + 5 = n$

---

1. Write T if the sentence is true. Write F if the sentence is false.

   a $12 \times 5 = 52$ _F_   **b** $80 > 9 \times 9$ _F_   **c** $56 < 7 \times 8$ _F_

   d $\frac{2}{3} > \frac{3}{4}$ _F_   **e** $\frac{3}{4} - \frac{1}{3} < 1$ _T_   **f** $65 - 36 = 29$ _T_

2. Use an operation symbol $(+, -, \times,$ or $\div)$ and a relation symbol $(>, <, =)$ to make a true sentence. _Answers will vary._

   a $2 \,\boxed{+}\, 5 \,\boxed{<}\, 9$ **b** $6 \,\boxed{\times}\, 4 \,\boxed{>}\, 20$ **c** $8 \,\boxed{=}\, 4 \,\boxed{+}\, 4$

   d $7 \,\boxed{\times}\, 3 \,\boxed{=}\, 21$ **e** $0 \,\boxed{+}\, 6 \,\boxed{=}\, 6$ **f** $\frac{3}{5} \,\boxed{+}\, \frac{2}{5} \,\boxed{=}\, 1$

3. Use the relation symbol $>, <,$ or $=$ to make a true sentence.

   a $19 \,\boxed{>}\, 17$ **b** $\frac{1}{3} \,\boxed{<}\, \frac{4}{9}$ **c** $\frac{2}{3} \,\boxed{=}\, \frac{4}{6}$

4. Solve the following problems. Write a true sentence to show that your answer is correct.

   a 17 cartons. 6 bottles in each.   **b** 72 chairs. 6 in each row.

    How many bottles? _102_   How many rows? _12_

    $17 \times 6 = 102$ $72 \div 6 = 12$

   c 120 people. 8 at each table.   **d** 9 cages. 3 birds in each.

    How many tables? _15_   How many birds? _27_

    $120 \div 8 = 15$ $9 \times 3 = 27$

Write the greatest common factor of the numerator and denominator.
Rewrite the fraction with its simplest name.

a

Fraction	Factors	Greatest common factor	Renamed fraction
1. $\frac{4}{6}$	1, 2, 4 1, 2, 3, 6	2	$\frac{2}{3}$
2. $\frac{6}{8}$	1, 2, 3, 6 1, 2, 4, 8	2	$\frac{3}{4}$
3. $\frac{4}{12}$	1, 2, 4 1, 2, 3, 4, 6, 12	4	$\frac{1}{3}$

b

Fraction	Factors	Greatest common factor	Renamed fraction
$\frac{6}{9}$	1, 2, 3, 6 1, 3, 9	3	$\frac{2}{3}$
$\frac{5}{10}$	1, 5 1, 2, 5, 10	5	$\frac{1}{2}$
$\frac{10}{16}$	1, 2, 5, 10 1, 2, 4, 8, 16	2	$\frac{5}{8}$

Write the simplest name for each.

a   b   c   d   e   f

4. $\frac{2}{10} = \frac{1}{5}$ $\frac{3}{15} = \frac{1}{5}$ $\frac{4}{8} = \frac{1}{2}$ $\frac{8}{12} = \frac{2}{3}$ $\frac{2}{6} = \frac{1}{3}$ $\frac{5}{15} = \frac{1}{3}$

Rename each whole number as a fraction.

5. $1 = \frac{4}{4}$ $2 = \frac{8}{4}$ $3 = \frac{12}{4}$ $4 = \frac{16}{4}$ $5 = \frac{20}{4}$ $6 = \frac{24}{4}$

6. $3 = \frac{9}{3}$ $4 = \frac{8}{2}$ $2 = \frac{12}{6}$ $2 = \frac{4}{2}$ $1 = \frac{5}{5}$ $5 = \frac{10}{2}$

Rename each mixed number as a fraction.

        a   b   c

7. $1\frac{2}{3} = \frac{5}{3}$ $2\frac{1}{3} = \frac{7}{3}$ $2\frac{2}{3} = \frac{8}{3}$

a   b   c   d   e   f

8. $4\frac{3}{4} = \frac{19}{4}$ $2\frac{3}{8} = \frac{19}{8}$ $1\frac{1}{2} = \frac{3}{2}$ $3\frac{2}{5} = \frac{17}{5}$ $3\frac{1}{4} = \frac{13}{4}$ $8\frac{1}{2} = \frac{17}{2}$

Rename each fraction as a mixed number.

a   b   c   d   e   f

9. $\frac{5}{2} = 2\frac{1}{2}$ $\frac{5}{4} = 1\frac{1}{4}$ $\frac{7}{5} = 1\frac{2}{5}$ $\frac{4}{3} = 1\frac{1}{3}$ $\frac{9}{2} = 4\frac{1}{2}$ $\frac{15}{4} = 3\frac{3}{4}$

56

Add. Write the simplest name for each sum.

	a	b	c	d
1.	$\frac{3}{5}+\frac{4}{5}=1\frac{2}{5}$	$\frac{3}{4}+\frac{1}{4}=1$	$\frac{5}{6}+\frac{5}{6}=1\frac{2}{3}$	$\frac{3}{8}+\frac{7}{8}=1\frac{1}{4}$
2.	$\frac{5}{8}+\frac{5}{8}=1\frac{1}{4}$	$\frac{4}{5}+\frac{2}{5}=1\frac{1}{5}$	$\frac{5}{12}+\frac{7}{12}=1$	$\frac{5}{6}+\frac{3}{6}=1\frac{1}{3}$

3. $\frac{2}{3}$ of a peach pie.

     $\frac{2}{3}$ of an apple pie.

     How much pie altogether? $1\frac{1}{3}$ pies

4. $\frac{3}{4}$ h to drive to work.

     $\frac{3}{4}$ h to drive home again.

     How much time altogether? $1\frac{1}{2}$ h

	a	b	c	d	e
5.	$7\frac{3}{4}$ $+2\frac{1}{4}$ = 10	$4\frac{5}{6}$ $+1\frac{1}{6}$ = 6	$3\frac{7}{8}$ $+\frac{5}{8}$ = $4\frac{1}{2}$	$6\frac{1}{2}$ $+3\frac{1}{2}$ = 10	$1\frac{2}{5}$ $+4\frac{3}{5}$ = 6
6.	$2\frac{1}{3}$ $+2\frac{1}{3}$ = $4\frac{2}{3}$	$\frac{5}{9}$ $+4\frac{1}{9}$ = $4\frac{2}{3}$	$2\frac{5}{12}$ $+2\frac{3}{12}$ = $4\frac{2}{3}$	$10\frac{9}{10}$ $+4\frac{7}{10}$ = $15\frac{3}{5}$	$25\frac{3}{4}$ $+14\frac{3}{4}$ = $40\frac{1}{2}$

Rename each mixed number with its simplest name.

	a	b	c	d	e
7.	$3\frac{13}{8}=4\frac{5}{8}$	$1\frac{9}{5}=2\frac{4}{5}$	$4\frac{7}{4}=5\frac{3}{4}$	$2\frac{3}{2}=3\frac{1}{2}$	$5\frac{5}{4}=6\frac{1}{4}$
8.	$5\frac{4}{3}=6\frac{1}{3}$	$3\frac{8}{5}=4\frac{3}{5}$	$2\frac{2}{2}=3$	$4\frac{13}{10}=5\frac{3}{10}$	$3\frac{6}{4}=4\frac{1}{2}$

Rename each whole number as a mixed number or fraction.

	a	b	c	d	e	f

1. $3 = 2\frac{2}{2}$ $5 = 4\frac{3}{3}$ $2 = 1\frac{4}{4}$ $1 = \frac{9}{9}$ $4 = 3\frac{3}{3}$ $2 = 1\frac{2}{2}$

Subtract. Write the simplest name for each answer.

	a	b	c

2. $2 - \frac{3}{4} = \underline{1\frac{1}{4}}$ $4 - \frac{1}{3} = \underline{3\frac{2}{3}}$ $3 - \frac{1}{2} = \underline{2\frac{1}{2}}$

3. $1\frac{3}{4} - \frac{1}{4} = \underline{1\frac{1}{2}}$ $5\frac{3}{5} - \frac{1}{5} = \underline{5\frac{2}{5}}$ $1 - \frac{5}{8} = \underline{\frac{3}{8}}$

	a	b	c	d	e

4.
$5\frac{2}{3}$	$3\frac{3}{4}$	6	$4\frac{7}{10}$	1
$-\frac{1}{3}$	$-\frac{1}{4}$	$-\frac{1}{2}$	$-\frac{3}{10}$	$-\frac{5}{12}$
$5\frac{1}{3}$	$3\frac{1}{2}$	$5\frac{1}{2}$	$4\frac{2}{5}$	$\frac{7}{12}$

5. You have 1 vegetable garden to weed. You have done $\frac{1}{4}$ of it. How much is left to do?

$\frac{3}{4}$ of the garden

6. Jane picked $6\frac{3}{4}$ baskets of apples. John picked $5\frac{1}{4}$ baskets. How much more did Jane pick?

$1\frac{1}{2}$ baskets

	a	b	c	d	e

7.
$7\frac{3}{5}$	$10\frac{1}{8}$	$9\frac{4}{6}$	$8\frac{5}{9}$	$4\frac{11}{12}$
$-4\frac{1}{5}$	-7	$-5\frac{1}{6}$	$-2\frac{2}{9}$	$-3\frac{7}{12}$
$3\frac{2}{5}$	$3\frac{1}{8}$	$4\frac{1}{2}$	$6\frac{1}{3}$	$1\frac{1}{3}$

Write the simplest name for each.

	a	b	c	d	e	f

1. $\frac{3}{9} = \frac{1}{3}$ $\frac{3}{6} = \frac{1}{2}$ $\frac{6}{8} = \frac{3}{4}$ $\frac{7}{21} = \frac{1}{3}$ $\frac{10}{16} = \frac{5}{8}$ $\frac{2}{10} = \frac{1}{5}$

Rename each mixed number as another mixed number or fraction.

2. $1\frac{2}{3} = \frac{5}{3}$ $3\frac{4}{5} = 2\frac{9}{5}$ $5\frac{1}{8} = 4\frac{9}{8}$ $4\frac{1}{2} = 3\frac{3}{2}$ $2\frac{3}{4} = 1\frac{7}{4}$ $3\frac{5}{6} = 2\frac{11}{6}$

Rename each fraction as a mixed number. Give the simplest name.

3. $\frac{7}{6} = 1\frac{1}{6}$ $\frac{8}{5} = 1\frac{3}{5}$ $\frac{13}{8} = 1\frac{5}{8}$ $\frac{6}{4} = 1\frac{1}{2}$ $\frac{4}{3} = 1\frac{1}{3}$ $\frac{10}{6} = 1\frac{2}{3}$

Add. Write the simplest name for each answer.

a	b	c	d

4. $\frac{3}{8} + \frac{3}{8} = \frac{3}{4}$ $\frac{9}{10} + \frac{3}{10} = 1\frac{1}{5}$ $\frac{2}{3} + \frac{1}{3} = 1$ $\frac{5}{6} + \frac{5}{6} = 1\frac{2}{3}$

5. $2\frac{1}{2} + \frac{1}{2} = 3$ $4\frac{3}{4} + 2\frac{1}{4} = 7$ $7\frac{3}{8} + \frac{7}{8} = 8\frac{1}{4}$ $1\frac{2}{3} + 3 = 4\frac{2}{3}$

Subtract. Write the simplest name for each answer.

a	b	c	d

6. $\frac{4}{5} - \frac{3}{5} = \frac{1}{5}$ $3 - \frac{5}{8} = 2\frac{3}{8}$ $2\frac{7}{9} - \frac{4}{9} = 2\frac{1}{3}$ $8\frac{5}{6} - 4\frac{1}{6} = 4\frac{2}{3}$

Add or subtract. Write the simplest name for each answer.

① $1\frac{2}{3} + \frac{1}{3} = 2$ ② $2\frac{2}{3} + \frac{1}{3} = 3$ ③ $3\frac{1}{3} + \frac{2}{3} = 4$

④ $1\frac{2}{3} - \frac{2}{3} = 1$ ⑤ $2\frac{1}{3} - \frac{1}{3} = 2$ ⑥ $3\frac{2}{3} - \frac{2}{3} = 3$

⑦ $4\frac{1}{2} + \frac{1}{2} = 5$ ⑧ $3\frac{5}{8} - \frac{3}{8} = 3\frac{1}{4}$ ⑨ $1\frac{5}{6} - \frac{1}{6} = 1\frac{2}{3}$

⑩ $\frac{3}{4} + \frac{3}{4} = 1\frac{1}{2}$ ⑪ $\frac{3}{4} - \frac{3}{4} = 0$ ⑫ $\frac{3}{4} - \frac{0}{4} = \frac{3}{4}$

Match to show equal numbers.

a

1. $\boxed{1}$ $\boxed{3\frac{2}{2}}$

2. $\boxed{2}$ $\boxed{\frac{5}{5}}$

3. $\boxed{3}$ $\boxed{1\frac{3}{3}}$

4. $\boxed{4}$ $\boxed{2\frac{8}{8}}$

b

$\boxed{2\frac{1}{5}}$ $\boxed{\frac{11}{5}}$

$\boxed{4\frac{2}{5}}$ $\boxed{3\frac{9}{5}}$

$\boxed{4\frac{4}{5}}$ $\boxed{3\frac{7}{5}}$

$\boxed{4\frac{1}{5}}$ $\boxed{3\frac{6}{5}}$

c

$\boxed{2\frac{1}{2}}$ $\boxed{3\frac{5}{4}}$

$\boxed{4\frac{1}{4}}$ $\boxed{2\frac{4}{3}}$

$\boxed{4\frac{3}{5}}$ $\boxed{1\frac{3}{2}}$

$\boxed{3\frac{1}{3}}$ $\boxed{3\frac{8}{5}}$
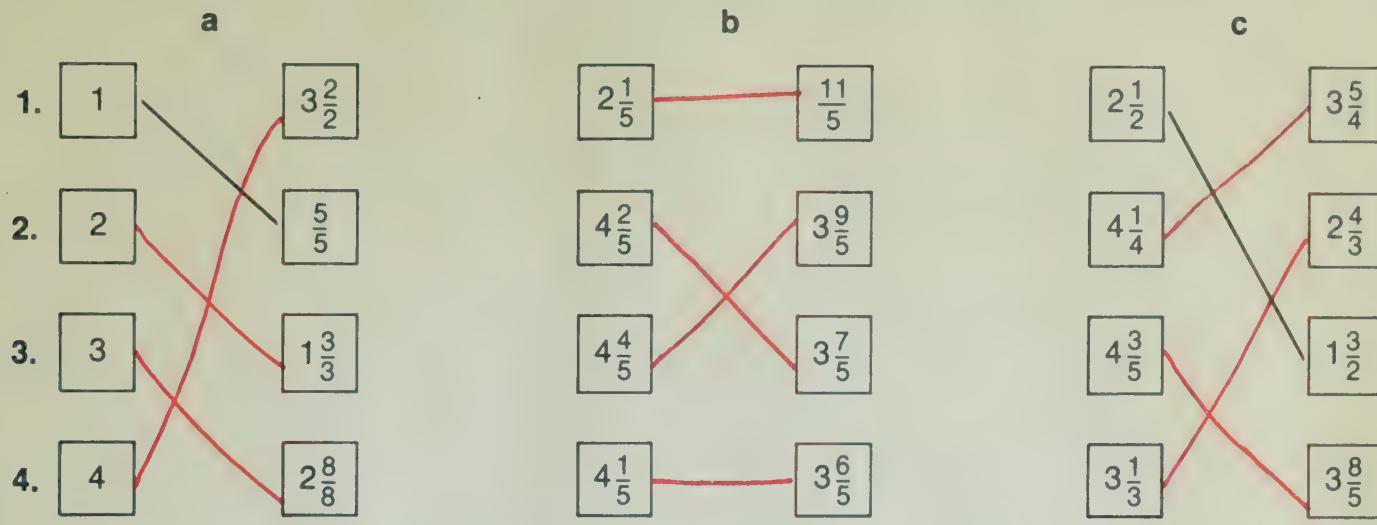
Subtract. (You may have to rename.)
Write the simplest name for each answer.

① $2\frac{1}{5}$
  $-\ \frac{4}{5}$
  $1\frac{2}{5}$

② $3\frac{5}{9}$
  $-\ 3\frac{2}{9}$
  $\frac{1}{3}$

③ $5\frac{2}{3}$
  $-\ 4\frac{1}{3}$
  $1\frac{1}{3}$

④ $7\frac{3}{8}$
  $-\ 2\frac{5}{8}$
  $4\frac{3}{4}$

⑤ $2\frac{3}{7}$
  $-\ 1\frac{6}{7}$
  $\frac{4}{7}$

⑥ $4\frac{1}{3}$
  $-\ 2\frac{2}{3}$
  $1\frac{2}{3}$

⑦ $3\frac{1}{10}$
  $-\ 1\frac{7}{10}$
  $1\frac{2}{5}$

⑧ $6\frac{3}{8}$
  $-\ 3$
  $3\frac{3}{8}$

⑨ 9
  $-\ 4\frac{1}{2}$
  $4\frac{1}{2}$

⑩ 6
  $-\ 1\frac{3}{4}$
  $4\frac{1}{4}$

⑪ $10\frac{1}{4}$
  $-\ 9\frac{3}{4}$
  $\frac{1}{2}$

Answer the questions.
Rewrite each pair of fractions so they have a common denominator.

1. $\frac{1}{2} + \frac{1}{6} = ?$

Can $\frac{1}{2}$ be renamed as $\frac{?}{6}$? **yes**

Can $\frac{1}{6}$ be renamed as $\frac{?}{2}$? **no**

$\frac{1}{2} + \frac{1}{6} = \frac{3}{6} + \frac{1}{6}$

2. $\frac{5}{6} + \frac{1}{3} = ?$

Can $\frac{5}{6}$ be renamed as $\frac{?}{3}$? **no**

Can $\frac{1}{3}$ be renamed as $\frac{?}{6}$? **yes**

$\frac{5}{6} + \frac{1}{3} = \frac{5}{6} + \frac{2}{6}$

3. $\frac{2}{3} + \frac{1}{9} = ?$

Can $\frac{2}{3}$ be renamed as $\frac{?}{9}$? **yes**

Can $\frac{1}{9}$ be renamed as $\frac{?}{3}$? **no**

$\frac{2}{3} + \frac{1}{9} = \frac{6}{9} + \frac{1}{9}$

4. $\frac{3}{8} + \frac{1}{2} = ?$

Can $\frac{3}{8}$ be renamed as $\frac{?}{2}$? **no**

Can $\frac{1}{2}$ be renamed as $\frac{?}{8}$? **yes**

$\frac{3}{8} + \frac{1}{2} = \frac{3}{8} + \frac{4}{8}$

5. Write the simplest name for each sum. Exercises 1-4 are recopied below.

a	b	c	d
$\frac{1}{2} + \frac{1}{6} = \frac{2}{3}$	$\frac{5}{6} + \frac{1}{3} = 1\frac{1}{6}$	$\frac{2}{3} + \frac{1}{9} = \frac{7}{9}$	$\frac{3}{8} + \frac{1}{2} = \frac{7}{8}$

Add. Write the simplest name for your answer.

a

6. $\frac{5}{5} + \frac{3}{10} = \frac{10}{10} + \frac{3}{10} = 1\frac{3}{10}$

7. $\frac{5}{6} + \frac{1}{2} = \frac{5}{6} + \frac{3}{6} = \frac{8}{6} = 1\frac{1}{3}$

8. $\frac{1}{3} + \frac{1}{12} = \frac{4}{12} + \frac{1}{12} = \frac{5}{12}$

9. $\frac{1}{3} + \frac{2}{9} = \frac{3}{9} + \frac{2}{9} = \frac{5}{9}$

b

$\frac{3}{4} + \frac{1}{8} = \frac{6}{8} + \frac{1}{8} = \frac{7}{8}$

$\frac{2}{3} + \frac{5}{6} = \frac{4}{6} + \frac{5}{6} = 1\frac{1}{2}$

$\frac{5}{12} + \frac{1}{6} = \frac{5}{12} + \frac{2}{12} = \frac{7}{12}$

$\frac{1}{2} + \frac{7}{10} = \frac{5}{10} + \frac{7}{10} = 1\frac{1}{5}$

Answer the questions.
Rewrite each pair of fractions so they have a common denominator.
Write the simplest name for the difference.

1. $\frac{1}{2} - \frac{3}{8} = ?$

Can $\frac{1}{2}$ be renamed as $\frac{?}{8}$? *Yes*

Can $\frac{3}{8}$ be renamed as $\frac{?}{2}$? *no*

$\frac{1}{2} - \frac{3}{8} = \frac{4}{8} - \frac{3}{8} = \frac{1}{8}$

2. $\frac{7}{9} - \frac{2}{3} = ?$

Can $\frac{7}{9}$ be renamed as $\frac{?}{3}$? *no*

Can $\frac{2}{3}$ be renamed as $\frac{?}{9}$? *Yes*

$\frac{7}{9} - \frac{2}{3} = \frac{7}{9} - \frac{6}{9} = \frac{1}{9}$

3. $\frac{9}{14} - \frac{1}{2} = ?$

Can $\frac{9}{14}$ be renamed as $\frac{?}{2}$? *no*

Can $\frac{1}{2}$ be renamed as $\frac{?}{14}$? *Yes*

$\frac{9}{14} - \frac{1}{2} = \frac{9}{14} - \frac{7}{14} = \frac{2}{14} = \frac{1}{7}$

Add. Write the simplest name for each sum.

① $\frac{2}{3} + \frac{3}{10} = \frac{20}{30} + \frac{9}{30} = \frac{29}{30}$

② $\frac{1}{3} + \frac{4}{9} = \frac{3}{9} + \frac{4}{9} = \frac{7}{9}$

③ $\frac{3}{8} + \frac{1}{2} = \frac{3}{8} + \frac{4}{8} = \frac{7}{8}$

④ $\frac{1}{6} + \frac{2}{3} = \frac{1}{6} + \frac{4}{6} = \frac{5}{6}$

⑤ $\frac{7}{8} + \frac{3}{4} = \frac{7}{8} + \frac{6}{8} = 1\frac{5}{8}$

⑥ $\frac{4}{9} + \frac{1}{3} = \frac{4}{9} + \frac{3}{9} = \frac{7}{9}$

⑦ $\frac{5}{12} + \frac{1}{4} = \frac{5}{12} + \frac{3}{12} = \frac{2}{3}$

⑧ $\frac{3}{4} + \frac{3}{8} = \frac{6}{8} + \frac{3}{8} = 1\frac{1}{8}$

⑨ $\frac{1}{3} + \frac{7}{12} = \frac{4}{12} + \frac{7}{12} = \frac{11}{12}$

⑩ $\frac{3}{14} + \frac{1}{2} = \frac{3}{14} + \frac{7}{14} = \frac{5}{7}$

⑪ $\frac{3}{10} + \frac{9}{100} = \frac{30}{100} + \frac{9}{100} = \frac{39}{100}$

⑫ $\frac{2}{3} + \frac{5}{12} = \frac{8}{12} + \frac{5}{12} = 1\frac{1}{12}$

⑬ $\frac{1}{10} + \frac{17}{100} = \frac{10}{100} + \frac{17}{100} = \frac{27}{100}$

⑭ $\frac{4}{15} + \frac{1}{3} = \frac{4}{15} + \frac{5}{15} = \frac{3}{5}$

Write the simplest name for each.

	a	b	c	d	e	f
1.	$\frac{9}{12} = \frac{3}{4}$	$\frac{15}{6} = 2\frac{1}{2}$	$\frac{6}{5} = 1\frac{1}{5}$	$\frac{8}{12} = \frac{2}{3}$	$\frac{17}{9} = 1\frac{8}{9}$	$\frac{14}{8} = 1\frac{3}{4}$

Multiply. Write the simplest name for each product.
You do not need to write the steps you can do in your head.

Examples:

$$3 \times \frac{2}{5} = \frac{3 \times 2}{5} = \frac{6}{5} = 1\frac{1}{5}$$

$$\frac{2}{3} \times 4 = \frac{2 \times 4}{3} = \frac{8}{3} = 2\frac{2}{3}$$

	a	b	c
2.	$2 \times \frac{4}{9} = \frac{8}{9}$	$\frac{1}{2} \times 5 = 2\frac{1}{2}$	$1 \times \frac{2}{3} = \frac{2}{3}$
3.	$\frac{5}{8} \times 4 = 2\frac{1}{2}$	$10 \times \frac{3}{5} = 6$	$\frac{7}{10} \times 3 = 2\frac{1}{10}$
4.	$3 \times \frac{7}{9} = 2\frac{1}{3}$	$\frac{2}{3} \times 7 = 4\frac{2}{3}$	$\frac{1}{8} \times 10 = 1\frac{1}{4}$

Write the simplest name for each answer.

5. A repairman takes 5 h to repair a car. He has finished $\frac{2}{3}$ of the job. How long has he worked?

$3\frac{1}{3}$ h

6. It takes 10 h to repair a clock. Kim has finished $\frac{3}{4}$ of the work. How long has she worked?

$7\frac{1}{2}$ h

Multiply. Write the simplest name for each answer.

① $3 \times \frac{1}{3} = 1$

② $2 \times \frac{3}{4} = 1\frac{1}{2}$

③ $4 \times \frac{5}{6} = 3\frac{1}{3}$

④ $\frac{4}{5} \times 10 = 8$

⑤ $\frac{1}{4} \times 8 = 2$

⑥ $\frac{1}{2} \times 7 = 3\frac{1}{2}$

⑦ $5 \times \frac{2}{3} = 3\frac{1}{3}$

⑧ $\frac{3}{10} \times 4 = 1\frac{1}{5}$

⑨ $6 \times \frac{7}{8} = 5\frac{1}{4}$

Multiply. Write the simplest name for each product.

	a	b	c	d
1.	$\frac{1}{4} \times \frac{4}{7} = \frac{1}{7}$	$\frac{5}{8} \times \frac{3}{4} = \frac{15}{32}$	$\frac{2}{3} \times \frac{5}{9} = \frac{10}{27}$	$\frac{1}{6} \times \frac{2}{7} = \frac{1}{21}$
2.	$\frac{3}{8} \times \frac{1}{2} = \frac{3}{16}$	$\frac{3}{4} \times \frac{5}{6} = \frac{5}{8}$	$\frac{7}{8} \times \frac{1}{3} = \frac{7}{24}$	$\frac{1}{4} \times \frac{2}{7} = \frac{1}{14}$
3.	$\frac{2}{5} \times \frac{4}{5} = \frac{8}{25}$	$\frac{5}{8} \times \frac{2}{3} = \frac{5}{12}$	$\frac{1}{9} \times \frac{3}{4} = \frac{1}{12}$	$\frac{2}{5} \times \frac{3}{4} = \frac{3}{10}$
4.	$\frac{1}{3} \times \frac{1}{6} = \frac{1}{18}$	$\frac{2}{3} \times \frac{3}{4} = \frac{1}{2}$	$\frac{5}{6} \times \frac{5}{6} = \frac{25}{36}$	$\frac{5}{12} \times \frac{2}{3} = \frac{5}{18}$

5. To paint some scenery for a school play, a class used $\frac{3}{4}$ can of green paint, and half as much red. How much red did they use? $\frac{3}{8}$ can

6. $\frac{1}{2}$ of our class has a newspaper route. $\frac{2}{3}$ of these students are girls. What fraction of the students who have a newspaper route are girls? $\frac{1}{3}$ of the students

7. $\frac{3}{4}$ of the class are on the swim team. $\frac{1}{3}$ of these students are in the play. What fraction of the class is involved in the play? $\frac{1}{4}$ of the class

Multiply. Write the simplest name for each answer.

① $\frac{1}{2} \times \frac{3}{5} = \frac{3}{10}$ ② $\frac{2}{3} \times \frac{2}{7} = \frac{4}{21}$ ③ $\frac{1}{2} \times \frac{1}{3} = \frac{1}{6}$ ④ $\frac{4}{5} \times \frac{1}{3} = \frac{4}{15}$

⑤ $\frac{3}{10} \times \frac{9}{10} = \frac{27}{100}$ ⑥ $\frac{3}{4} \times \frac{1}{4} = \frac{3}{16}$ ⑦ $\frac{0}{5} \times \frac{1}{2} = 0$ ⑧ $\frac{3}{8} \times \frac{1}{4} = \frac{3}{32}$

Add or subtract. Write the simplest name for each answer.

	a	b	c	d

1.

a) $\frac{3}{10}$ $+ \frac{3}{10}$ = $\frac{3}{5}$

b) $\frac{1}{5}$ $+ \frac{3}{4}$ = $\frac{19}{20}$

c) $2\frac{3}{8}$ $+ 3\frac{1}{8}$ = $5\frac{1}{2}$

d) $\frac{5}{6}$ $+ \frac{1}{4}$ = $1\frac{1}{12}$

2.

a) $3\frac{4}{5}$ $- 1\frac{3}{5}$ = $2\frac{1}{5}$

b) $\frac{3}{4}$ $- \frac{3}{8}$ = $\frac{3}{8}$

c) 4 $- 1\frac{2}{3}$ = $2\frac{1}{3}$

d) $4\frac{1}{3}$ $- 2\frac{2}{3}$ = $1\frac{2}{3}$

3.

a) $3\frac{11}{12}$ $- 1\frac{4}{9}$ = $2\frac{17}{36}$

b) $7\frac{3}{4}$ $+ \frac{3}{8}$ = $8\frac{1}{8}$

c) $9\frac{6}{7}$ $- 5\frac{3}{8}$ = $4\frac{27}{56}$

d) $10\frac{4}{5}$ $+ 2\frac{2}{3}$ = $13\frac{7}{15}$

Multiply. Write the simplest name for each answer.

4. $4 \times \frac{1}{5} = \frac{4}{5}$ $\qquad$ $\frac{2}{3} \times 10 = 6\frac{2}{3}$ $\qquad$ $\frac{3}{4} \times 6 = 4\frac{1}{2}$ $\qquad$ $\frac{1}{2} \times 9 = 4\frac{1}{2}$

5. $\frac{2}{9} \times \frac{2}{3} = \frac{4}{27}$ $\qquad$ $\frac{1}{2} \times \frac{5}{8} = \frac{5}{16}$ $\qquad$ $\frac{3}{5} \times \frac{3}{5} = \frac{9}{25}$ $\qquad$ $\frac{1}{6} \times \frac{3}{5} = \frac{1}{10}$

Add or subtract. Write the simplest name for each answer.

	a	b	c	d

1.

a) $4\frac{3}{4}$ $+ 3\frac{3}{4}$ = $8\frac{1}{2}$

b) $5\frac{2}{9}$ $+ 2\frac{1}{3}$ = $7\frac{5}{9}$

c) $7\frac{5}{6}$ $- 6\frac{1}{6}$ = $1\frac{2}{3}$

d) $4\frac{5}{6}$ $- 2\frac{2}{3}$ = $2\frac{1}{6}$

Multiply. Write the simplest name for each answer.

2. $5 \times \frac{1}{4} = 1\frac{1}{4}$ $\qquad$ $\frac{2}{3} \times 3 = 2$ $\qquad$ $\frac{3}{8} \times \frac{1}{2} = \frac{3}{16}$ $\qquad$ $\frac{3}{4} \times \frac{1}{3} = \frac{1}{4}$

538.42

hundreds —————— hundredths

tens —————— tenths

ones ——————

Write each number
as in the example.

$23.35 = 23 + \frac{3}{10} + \frac{5}{100}$

1. $14.75 = \underline{14} + \underline{\frac{7}{10}} + \underline{\frac{5}{100}}$

2. $5.48 = \underline{5} + \underline{\frac{4}{10}} + \underline{\frac{8}{100}}$

3. $92.37 = \underline{92} + \underline{\frac{3}{10}} + \underline{\frac{7}{100}}$

Write each number
as in the example.

$72 + \frac{1}{10} + \frac{7}{100} = 72.17$

4. $26 + \frac{4}{10} + \frac{1}{100} = \underline{26.41}$

5. $78 + \frac{2}{10} + \frac{3}{100} = \underline{78.23}$

6. $5 + \frac{6}{10} + \frac{3}{100} = \underline{5.63}$

Write a decimal for each fraction.

	a	b	c	d	e	f
7.	$\frac{3}{10} = 0.3$	$\frac{7}{10} = 0.7$	$\frac{2}{10} = 0.2$	$\frac{1}{10} = 0.1$	$\frac{4}{10} = 0.4$	$\frac{9}{10} = 0.9$
8.	$\frac{3}{10} = 0.3$	$\frac{7}{100} = 0.07$	$\frac{2}{100} = 0.02$	$\frac{1}{100} = 0.01$	$\frac{46}{100} = 0.46$	$\frac{93}{100} = 0.93$

Write a fraction for each decimal.

	a	b	c	d	e
9.	$1.4 = 1\frac{4}{10}$	$3.5 = 3\frac{5}{10}$	$2.8 = 2\frac{8}{10}$	$6.1 = 6\frac{1}{10}$	$0.2 = \frac{2}{10}$
10.	$5.06 = 5\frac{6}{100}$	$10.02 = 10\frac{2}{100}$	$0.03 = \frac{3}{100}$	$17.01 = 17\frac{1}{100}$	$25.08 = 25\frac{8}{10}$

Answer "yes" or "no."

	a	b	c
11.	Does $\frac{4}{5} = 0.8$? Yes	Does $\frac{4}{5} = 0.80$? Yes	Does $\frac{4}{5} = 0.08$? No
12.	Does $2\frac{2}{5} = 2.4$? Yes	Does $2.4 = 2.04$? No	Does $2.4 = 0.24$? No

Ring each numeral in the tenths place.

a	b	c	d	e
1. 21.8⑥6	73.⑤0	13.⑧94	31.⑤5	13.⑨82

Ring each numeral in the hundredths place.

2. 79.5⑥6	35.0⑧8	1.3⑤7	14.2⑨1	19.7⑧20

Ring each numeral in the thousandths place.

3. 3.42②2	25.90③3	0.89⑦7	91.63⑤5	15.00⑦75

Study the chart below. The decimals in the first column are equal to the fractions in the second column. The third column tells what each decimal means. Write the missing numbers.

	Decimal	Fraction	Meaning
①	0.3	$\frac{3}{10}$	3 tenths
②	0.03	$\frac{3}{100}$	3 hundredths
③	0.003	$\frac{3}{1000}$	3 thousandths
④	0.7	$\frac{7}{10}$	7 tenths
⑤	0.05	$\frac{5}{100}$	5 hundredths
⑥	0.002	$\frac{2}{1000}$	2 thousandths
⑦	0.61	$\frac{61}{100}$	61 hundredths
⑧	0.054	$\frac{54}{1000}$	54 thousandths
⑨	0.455	$\frac{455}{1000}$	455 thousandths
⑩	0.407	$\frac{407}{1000}$	407 thousandths

⑪ What is the smallest number in the chart? ___0.002___

Add or subtract.

	a	b	c	d	e
1.	0.3 + 0.3 **0.6**	0.8 − 0.7 **0.1**	0.5 + 0.5 **1.0**	5.6 − 0.4 **5.2**	9.7 − 1.6 **8.1**
2.	3.2 + 4.1 **7.3**	0.5 + 7.4 **7.9**	12.8 − 5.9 **6.9**	35.0 + 20.8 **55.8**	27.0 − 23.7 **3.3**

Estimate the answer. Then add or subtract.

	a	b	c	d
3.	2.90 **(1)** − 2.15 **0.75**	54.23 **(65)** + 10.85 **65.08**	5.00 **(1)** − 4.38 **0.62**	28.121 **(32)** + 3.603 **31.724**

Estimate. Write your estimate in the parentheses.
Then add or subtract to find the exact answers. *Estimates may vary.*

①   2.2
   + 3.0
    5.2

②   62.8
   − 6.9
    55.9

③   7.0
   − 3.5
    3.5

④   15.87
   + 23.12
    38.99

(**5**)   (**56**)   (**3**)   (**39**)

⑤ 16.11 + 13.81 = **29.92**   ⑥ 14.2 − 3.5 = **10.7**   ⑦ 50.03 − 9.99 = **40.04**

(**30**)   (**10**)   (**40**)

⑧ 5.02 + 3.76 = **8.78**   ⑨ 30.06 − 6.89 = **23.17**   ⑩ 17.00 − 4.13 = **12.87**

(**9**)   (**23**)   (**13**)

⑪   9.90
   + 7.32
    17.22

⑫   13.47
   + 19.83
    33.30

⑬   65.00
   − 17.98
    47.02

(**17**)   (**33**)   (**47**)

1. Does 0.5 = 0.50 = 0.500? *Yes*

2. Does 0.8 = 0.08 = 0.008? *No*

3. Does 3 = 3.0 = 3.00? *Yes*

4. Does 0.002 = 0.02 = 0.2? *No*

Order each set from smallest to largest.

5. 7.0, 7.7, 70.7 *7.0, 7.7, 70.7*

6. 0.07, 0.70, 7.7 *0.07, 0.70, 7.7*

7. 0.77, 0.70, 0.07 *0.07, 0.70, 0.77*

8. 0.7, 0.71, 0.07 *0.07, 0.7, 0.71*

Add.

	a	b	c	d
9.	0.56 and 0.43	0.30 and 0.30	0.29 and 0.95	0.89 and 0.11
	0.99	*0.60*	*1.24*	*1.00*
10.	4.73 and 2.69	1.5 and 7.25	40.1 and 9.9	70 and 0.07
	7.42	*8.75*	*50.0*	*70.07*

Subtract.

	a	b	c	d
11.	0.84 − 0.32	0.50 − 0.26	3.91 − 0.71	20.50 − 0.25
	0.52	*0.24*	*3.20*	*20.25*
12.	6.00 − 0.69	7.08 − 0.23	1.5 − 0.09	60 − 0.03
	5.31	*6.85*	*1.41*	*59.97*

Write the correct unit in the blank.

	a	**b**	**c**
	Length	Mass	Capacity

1. 1 _km_ = 1000 m   1 _kg_ = 1000 g   1 _kl_ = 1000 ℓ

2. 1 _hm_ = 100 m   1 _hg_ = 100 g   1 _hl_ = 100 ℓ

3. 1 _dam_ = 10 m   1 _dag_ = 10 g   1 _dal_ = 10 ℓ

Correct the mistakes.

   a   **b**   **c**

4. 16 g. _16 g_   14 mls _14 ml_   6KG _6 kg_

5. 250m _250 m_   13 Mg _13 mg_   29°c _29°C_

Would you use centimetres, metres, or kilometres to measure

   a   **b**

6. the distance between cities? _kilometres_   the height of a man? _centimetres_

7. the length of material? _metres_   the distance to the moon? _kilometres_

8. the length of a worm? _centimetres_   the length of a field? _metres_

Would you use grams, milligrams, or kilograms to find the mass of

   a   **b**

9. a head of cabbage? _grams_   a bag of cement? _kilograms_

10. a bag of dog food? _kilograms_   a letter? _milligrams_

11. a postage stamp? _milligrams_   a box of cereal? _grams_

Write the correct numeral and symbol for each measurement.

   a   **b**

12. seventy kilometres _70 km_   one hundred three metres _103 m_

13. six milligrams _6 mg_   fourteen grams _14 g_

14. one centimetre _1 cm_   fifty-two kilometres _52 km_

Use > or < to complete.

	a	b	c
1.	metre $>$ centimetre	gram $<$ kilogram	litre $>$ millilitre
2.	hectogram $>$ decagram	milligram $<$ gram	millilitre $<$ decilitre
3.	decimetre $<$ metre	kilogram $>$ milligram	decalitre $>$ centilitre

Use >, <, or = to complete.

	a	b
4.	1 km $>$ 10 m	1 g $<$ 1000 kg
5.	10 dm $=$ 1 m	1 dag $>$ 1000 mg
6.	10 cm $<$ 1 m	1 kg $>$ 1000 mg

Answer the questions.

	a		b	
7.	How many centimetres in a metre?	100	How many decimetres in a metre?	10
8.	How many metres in a kilometre?	1000	How many millimetres in a centimetre?	10
9.	How many milligrams in a gram?	1000	How many grams in a kilogram?	1000
10.	How many decilitres in a litre?	10	How many litres in a decalitre?	10

11. Draw and label an object that could a) be about 1 m long,
b) have a mass of about 1 kg, c) contain about 1 ℓ .

a   b   c

Drawings will vary.

What unit would be most suitable to describe each of these items?
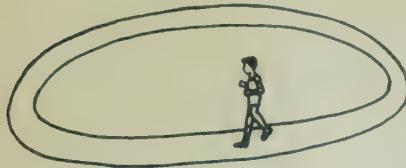
1. *metre*
(length)

2. *kilogram*
(mass)

3. *millilitre*
(capacity)
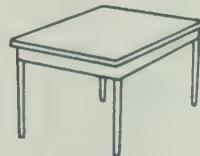
4. *kilogram*
(mass)

5. *centimetre*
(length)
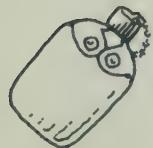
6. *litre*
(capacity)

7. *millimetre*
(length)

8. *kilogram*
(mass)
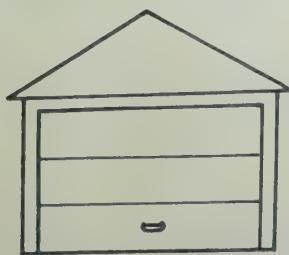
9. *metre*
(width)

10. *metre*
(height)

Circle the correct unit for measuring.

1. The mass of an elephant · · · · · · · · (tonne) · · · · · · · gram · · · · · · · metre

2. The height of a person · · · · · · · · metre · · · · · · · (centimetre) · · · · · · litre

3. The height of a mountain · · · · · · · litre · · · · · · · centimetre · · · · · · (metre)

4. The capacity of a pail · · · · · · · · kilolitre · · · · · · centimetre · · · · · · (litre)

5. The width of a ribbon · · · · · · · · tonne · · · · · · · (millimetre) · · · · · · metre

6. The mass of a slice of bread · · · · · (gram) · · · · · · · tonne · · · · · · · metre

7. The length of a belt · · · · · · · · · (centimetre) · · · · · metre · · · · · · · litre

8. The depth of an ocean · · · · · · · · millimetre · · · · · (metre) · · · · · · · gram

9. The capacity of a kettle · · · · · · · centimetre · · · · · hectolitre · · · · · (litre)

10. The length of a nail · · · · · · · · · metre · · · · · · · (millimetre) · · · · · · gram

Change these measurements to centimetres.

	a	b	c
11.	37 mm = __3.7__ cm	69 mm = __6.9__ cm	13 mm = __1.3__ cm
12.	45 mm = __4.5__ cm	82 mm = __8.2__ cm	94 mm = __9.4__ cm

Change these measurements to metres.

	a	b	c
13.	104 cm = __1.04__ m	6 cm = __0.06__ m	357 cm = __3.57__ m
14.	18 cm = __0.18__ m	92 cm = __0.92__ m	9 cm = __0.09__ m

Write the correct numeral and symbol for each measurement.

a

15. one decilitre __1 dl__

16. ten litres __10 l__

17. one hundred grams __100 g__

b

sixty tonnes __60 t__

fifteen millimetres __15 mm__

thirty-five metres __35 m__

degrees
Celsius

① Write these temperatures in order
from highest to lowest.

37°C, 22°C, -29°C, -4°C, 20.5°C, -15.5°C

___37°C___ , ___22°C___ , ___20.5°C___ ,

___-4°C___ , ___-15.5°C___ , ___-29°C___ ,

② Mark the temperatures listed above
on the thermometer.

③ What unit is used to measure

  a the mass of a truck? _tonne_

  b the capacity of a tube of toothpaste? _millilitre_

  c the width of a carpet? _metre_

  d the height of a girl? _centimetre_

  e the length of a river? _kilometre_

④ Use > or < to complete.

  a kilolitre __>__ decalitre

  b decimetre __<__ hectometre

  c centigram __>__ milligram

  d decilitre __<__ hectolitre

  e metre __<__ kilometre

70

60

50

40 ----- 37° C

30

20 ----- 22°C
      ----- 20.5°C

10

0

  ----- -4°C

—10

  ----- -15.5°C

—20

—30 ----- -29°C
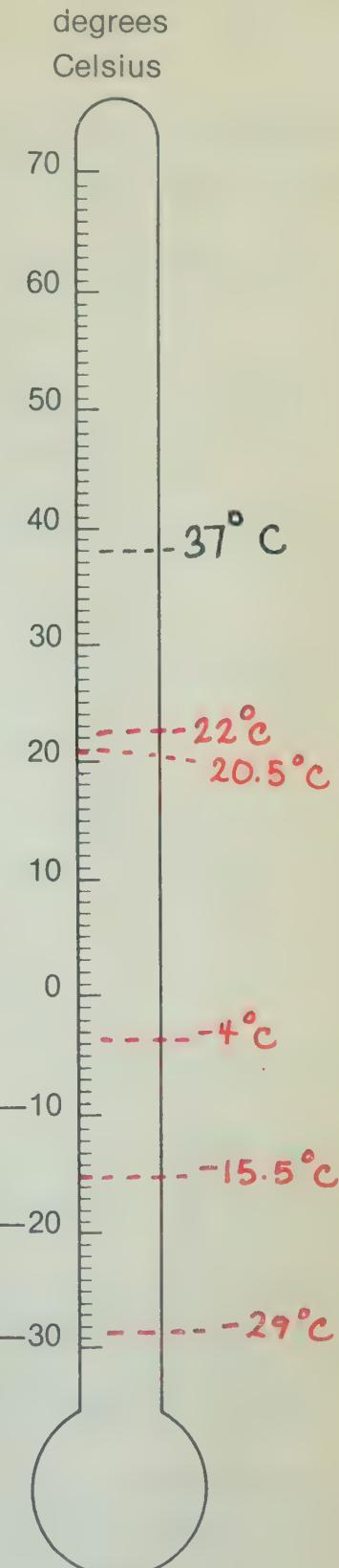
Tell which is the better buy.
Tell how much you would save.

1. Flour: 9 kg for $3.59

      3 kg for $1.39

9 kg for $3.59 $0.58

2. Sugar: 500 g for $0.42

      1 kg for $0.79

1 kg for $0.79 $0.05

3. Cat Food: 500 g for $0.80

       1 kg for $1.25

1 kg for $1.25 $0.35

4. Soft Drink: 750 ml for $0.45

      1.5 ℓ for $0.75

1.5 ℓ for $0.75 $0.15

5. Tea: 60 g for $0.90

      120 g for $1.69

120 g for $1.69 $0.11

Answer each problem.

6. Ron bought 2 kg of apples priced at $0.60
for 1 kg, and 3 kg of bananas at $0.15 for
1 kg . How much did these cost Ron altogether?

$1.65

7. Amy has to buy some paint. Brand A costs
$1.35 for 1 ℓ , and Brand B costs $6.20
for 5 ℓ . Which is the better buy? How
much would she save?

Brand B $0.55

8. Tom has $2.00 to spend. He is going to buy
some apples. If they cost $0.30 for 500 g,
how many kilograms can he buy? What change
does he get back?

3 kg $0.20

9. Bananas cost $0.15 for 1 kg . Jane has $0.75.
Can she buy 7 kg of bananas? If not, how many
kilograms can she buy?

No   *5 kg*

Write these times as they would appear on a 24-hour digital clock.

	a		**b**
1. 9:30 a.m.	09 30	9:30 p.m.	21 30
2. 2:15 a.m.	02 15	2:15 p.m.	14 15
3. 6:45 a.m.	06 45	8:45 p.m.	20 45
4. sixteen twenty-three	16 23	eighteen thirty	18 30
5. midnight	00 00 or 24 00	noon	12 00
6. thirteen five	13 05	twenty ten	20 10

Answer these.

7. Bob swam 100 m in 59.67 s .

   Don swam 100 m in 53.41 s .

   What was the difference in
   their times?   6.26 s

8. Team A ran the relay in 49.5 s .

   Team B ran the relay in 39.1 s .

   How much faster was Team A?   10.4 s

9. Amy ran 100 m in 15.4 s .

   The next day it took her

   0.5 s longer. What was her

   time the second day?   15.9 s

10. Jane ran 100 m in 11.6 s .

    She ran another 100 m in

    11.5 s . What was her total

    time?   22.11 s

Complete.

	a	b	c
1.	7.2 cm = 72 _mm_	34.91 m = 3491 _cm_	5.608 ℓ = 5608 _ml_
2.	2.479 m = 2479 _mm_	506 cm = 5.06 _m_	13 mm = 0.013 _m_
3.	46 ml = 0.046 _ℓ_	1.024 km = 1024 _m_	0.853 kg = 853 _g_
4.	8000 kg = 8.000 _t_	1256 ℓ = 1.256 _kℓ_	7.438 t = 7438 _kg_

Answer each problem.

5. Beth has 4 fish tanks. If each tank
   has a capacity of 16 ℓ , what is their
   total capacity in litres? in kilolitres?   _64 ℓ_   _0.064 kℓ_

6. A box of cereal has a mass of 368 g .
   You can get 16 equal servings from it.
   How many grams per serving? How many kilograms? _23 g_   _0.023 kg_

7. The weather bureau recorded the following amounts
   of rainfall for one week: Monday, 18 mm; Wednesday, 10 mm;
   Saturday, 11 mm . What was the total rainfall for the
   week in millimetres? in centimetres?   _39 mm_   _3.9 cm_

8. The mass of a turkey is 10 kg . Ten people were
   served 200 g portions of the turkey. How many grams
   of turkey were served? How many kilograms of turkey
   remained?   _2000 g_   _8 kg_

9. Bill's fish tanks have a total capacity of 96 ℓ .
   He is filling them with an 8 ℓ pail. How many
   trips must he make to fill the tanks? If each tank
   has a capacity of 16 ℓ , how many tanks does he have? _12 trips_ _6 tanks_

Complete.

	a	b	c
1.	6.1 cm = __61__ mm	0.178 kg = __178__ g	23 m = __0.023__ km
2.	19 ml = __0.019__ ℓ	0.045 km = __45__ m	4593 g = __4.593__ kg
3.	7.430 m = __7430__ mm	6000 kg = __6.000__ t	9853 ℓ = __9.853__ kl

1. Write the unit that you use to make the following measurements.

To be measured	Unit
a Width of a workbook	_centimetres_
b Capacity of an eyedropper	_millilitres_
c Mass of a steer	_kilograms_
d Distance from Canada to Mexico	_kilometres_
e Length of a picnic table	_metres_

Write the correct symbol.

	a	b	c
2.	decametre _da m_	decimetre _d m_	kilolitre _k l_
3.	millilitre _m l_	hectometre _h m_	centigram _c g_

Underline the preferred measurement.

4. The ribbon is 20 (cm, <u>mm</u>) wide.

5. The driver was going 100 (m/h, <u>km/h</u>).

6. The puppy's mass is 2 (g, <u>kg</u>) .

7. The mountain is 4000 (<u>m</u>, km) high.

Write four equivalent fractions for each. *Answers will vary.*

	a				**b**

1. $\frac{1}{4} = \frac{2}{8} = \frac{3}{12} = \frac{4}{16} = \frac{5}{20}$ $\frac{1}{3} = \frac{2}{6} = \frac{4}{12} = \frac{5}{15} = \frac{7}{21}$

2. $\frac{2}{3} = \frac{4}{6} = \frac{6}{9} = \frac{16}{24} = \frac{20}{30}$ $\frac{3}{4} = \frac{6}{8} = \frac{9}{12} = \frac{18}{24} = \frac{24}{32}$

Write the simplest name for each.

    a   **b**   **c**   **d**   **e**

3. $\frac{8}{10} = \frac{4}{5}$ $\frac{4}{6} = \frac{2}{3}$ $\frac{4}{12} = \frac{1}{3}$ $\frac{3}{12} = \frac{1}{4}$ $\frac{4}{10} = \frac{2}{5}$

4. $\frac{6}{9} = \frac{2}{3}$ $\frac{2}{8} = \frac{1}{4}$ $\frac{2}{4} = \frac{1}{2}$ $\frac{12}{20} = \frac{3}{5}$ $\frac{8}{24} = \frac{1}{3}$

Add or subtract. Write the simplest name for each answer.

    a   **b**   **c**   **d**   **e**

5.
$\begin{array}{r} \frac{3}{4} \\ + \frac{2}{4} \\ \hline 1\frac{1}{4} \end{array}$
$\begin{array}{r} \frac{5}{8} \\ - \frac{3}{8} \\ \hline \frac{1}{4} \end{array}$
$\begin{array}{r} 3\frac{4}{5} \\ - \frac{2}{5} \\ \hline 3\frac{2}{5} \end{array}$
$\begin{array}{r} 4\frac{1}{10} \\ + 1\frac{3}{10} \\ \hline 5\frac{2}{5} \end{array}$
$\begin{array}{r} 2\frac{7}{8} \\ - 1\frac{1}{8} \\ \hline 1\frac{3}{4} \end{array}$

6.
$\begin{array}{r} 3 \\ - \frac{3}{4} \\ \hline 2\frac{1}{4} \end{array}$
$\begin{array}{r} 5 \\ - 4\frac{4}{5} \\ \hline \frac{1}{5} \end{array}$
$\begin{array}{r} 9\frac{3}{5} \\ - 6\frac{4}{5} \\ \hline 2\frac{4}{5} \end{array}$
$\begin{array}{r} 8\frac{1}{2} \\ + 10\frac{1}{2} \\ \hline 19 \end{array}$
$\begin{array}{r} \frac{7}{12} \\ + 2\frac{7}{12} \\ \hline 3\frac{1}{6} \end{array}$

Rewrite each problem so the fractions have common denominators.
Don't compute the answers.

    a   **b**   **c**

7. $\frac{1}{8} + \frac{3}{4} = \frac{1}{8} + \frac{6}{8}$ $\frac{3}{8} + \frac{1}{2} = \frac{3}{8} + \frac{4}{8}$ $\frac{2}{3} + \frac{2}{9} = \frac{6}{9} + \frac{2}{9}$

8. $\frac{1}{12} + \frac{1}{4} = \frac{1}{12} + \frac{3}{12}$ $\frac{1}{4} + \frac{1}{2} = \frac{1}{4} + \frac{2}{4}$ $\frac{2}{3} + \frac{5}{12} = \frac{8}{12} + \frac{5}{12}$

9. $\frac{2}{9} + \frac{1}{3} = \frac{2}{9} + \frac{3}{9}$ $\frac{3}{10} + \frac{4}{5} = \frac{3}{10} + \frac{8}{10}$ $\frac{3}{10} + \frac{1}{2} = \frac{3}{10} + \frac{5}{10}$

Rename as whole numbers and mixed numbers in simplest form.

	a	b	c	d	e	f
1.	$\frac{10}{4} = 2\frac{1}{2}$	$\frac{8}{5} = 1\frac{3}{5}$	$\frac{7}{2} = 3\frac{1}{2}$	$\frac{12}{8} = 1\frac{1}{2}$	$\frac{11}{3} = 3\frac{2}{3}$	$\frac{15}{12} = 1\frac{1}{4}$
2.	$\frac{15}{3} = 5$	$\frac{20}{6} = 3\frac{1}{3}$	$\frac{6}{4} = 1\frac{1}{2}$	$\frac{9}{8} = 1\frac{1}{8}$	$\frac{15}{6} = 2\frac{1}{2}$	$\frac{24}{5} = 4\frac{4}{5}$

Find a common denominator. Rename and add. Write the simplest name for each sum.

	a	b	c
3.	$\frac{1}{5} + \frac{3}{10} = \frac{1}{2}$	$\frac{3}{4} + \frac{3}{8} = 1\frac{1}{8}$	$\frac{4}{9} + \frac{2}{3} = 1\frac{1}{9}$
4.	$\frac{1}{3} + \frac{1}{12} = \frac{5}{12}$	$\frac{1}{2} + \frac{3}{4} = 1\frac{1}{4}$	$\frac{1}{3} + \frac{5}{6} = 1\frac{1}{6}$

Write the missing numerators. Add. Write the simplest name for each sum.

	a		b		c		d	
5.	$2\frac{2}{3}$	$2\frac{4}{6}$	$3\frac{1}{5}$	$3\frac{2}{10}$	$4\frac{1}{2}$	$4\frac{4}{8}$	$2\frac{3}{4}$	$2\frac{9}{12}$
	$+\,3\frac{1}{6}$	$3\frac{1}{6}$	$+\,1\frac{3}{10}$	$1\frac{3}{10}$	$+\,5\frac{3}{8}$	$5\frac{3}{8}$	$+\,2\frac{5}{12}$	$2\frac{5}{12}$
		$5\frac{5}{6}$		$4\frac{1}{2}$		$9\frac{7}{8}$		$5\frac{1}{6}$
6.	$1\frac{2}{3}$	$1\frac{8}{12}$	$2\frac{1}{4}$	$2\frac{5}{20}$	$7\frac{1}{2}$	$7\frac{3}{6}$	$4\frac{2}{9}$	$4\frac{4}{18}$
	$+\,2\frac{3}{4}$	$2\frac{9}{12}$	$+\,3\frac{2}{5}$	$3\frac{8}{20}$	$+\,5\frac{1}{3}$	$5\frac{2}{6}$	$+\,3\frac{5}{6}$	$3\frac{15}{18}$
		$4\frac{5}{12}$		$5\frac{13}{20}$		$12\frac{5}{6}$		$8\frac{1}{18}$

Find a common denominator. Add. Write the simplest name for each sum.

	a	b	c	d
7.	$7\frac{1}{2}$	$10\frac{1}{2}$	$5\frac{2}{3}$	$9\frac{5}{8}$
	$+\,2\frac{1}{4}$	$+\,4\frac{3}{10}$	$+\,2\frac{1}{6}$	$+\,3\frac{1}{3}$
	$9\frac{3}{4}$	$14\frac{4}{5}$	$7\frac{5}{6}$	$12\frac{23}{24}$
8.	$2\frac{1}{5}$	$8\frac{2}{3}$	$3\frac{3}{4}$	$4\frac{1}{2}$
	$+\,1\frac{2}{3}$	$+\,7\frac{1}{4}$	$+\,6\frac{5}{6}$	$+\,3\frac{5}{9}$
	$3\frac{13}{15}$	$15\frac{11}{12}$	$10\frac{7}{12}$	$8\frac{1}{18}$

Write the missing numerators. Subtract. Write the simplest name for each answer.

	a		b		c		d	
1.	$3\frac{1}{4}$	$2\frac{5}{4}$	5	$4\frac{2}{2}$	$4\frac{2}{3}$	$4\frac{4}{6}$	$2\frac{4}{5}$	$2\frac{16}{20}$
	$-\ 2\frac{3}{4}$	$2\frac{3}{4}$	$-\ 1\frac{1}{2}$	$1\frac{1}{2}$	$-\ 3\frac{1}{6}$	$3\frac{1}{6}$	$-\ 1\frac{1}{4}$	$1\frac{5}{20}$
		$\frac{1}{2}$		$3\frac{1}{2}$		$1\frac{1}{2}$		$1\frac{11}{20}$

Rename when necessary. Subtract. Write the simplest name for each answer.

	a	b	c	d
2.	$2\frac{1}{5}$	$5\frac{1}{4}$	$5\frac{3}{8}$	3
	$-\ 1\frac{2}{5}$	$-\ \frac{3}{4}$	$-\ 4\frac{1}{4}$	$-\ 1\frac{3}{8}$
	$\frac{4}{5}$	$4\frac{1}{2}$	$1\frac{1}{8}$	$1\frac{5}{8}$
3.	7	4	$8\frac{1}{3}$	$10\frac{5}{6}$
	$-\ 3\frac{3}{4}$	$-\ 3\frac{1}{3}$	$-\ 2\frac{2}{3}$	$-\ 8\frac{1}{4}$
	$3\frac{1}{4}$	$\frac{2}{3}$	$5\frac{2}{3}$	$2\frac{7}{12}$
4.	$4\frac{3}{4}$	$2\frac{2}{3}$	$2\frac{7}{10}$	$3\frac{4}{5}$
	$-\ 2\frac{3}{8}$	$-\ 1\frac{1}{4}$	$-\ \frac{1}{2}$	$-\ 1\frac{1}{3}$
	$2\frac{3}{8}$	$1\frac{5}{12}$	$2\frac{1}{5}$	$2\frac{7}{15}$

Write the missing numerators. Subtract. Write the simplest name for each answer.

	a			b			c		
5.	$5\frac{1}{2}$	$5\frac{3}{6}$	$4\frac{9}{6}$	$6\frac{1}{4}$	$6\frac{5}{20}$	$5\frac{25}{20}$	$7\frac{1}{8}$	$7\frac{1}{8}$	$6\frac{9}{8}$
	$-\ 2\frac{2}{3}$	$2\frac{4}{6}$	$2\frac{4}{6}$	$-\ 2\frac{3}{5}$	$2\frac{12}{20}$	$2\frac{12}{20}$	$-\ 4\frac{3}{4}$	$4\frac{6}{8}$	$4\frac{6}{8}$
			$2\frac{5}{6}$			$3\frac{13}{20}$			$2\frac{3}{8}$

Find a common denominator. Subtract. Write the simplest name for each answer.

	a	b	c
6.	$2\frac{1}{3}$	$4\frac{1}{3}$	$5\frac{1}{2}$
	$-\ \frac{5}{6}$	$-\ 1\frac{3}{4}$	$-\ 3\frac{7}{12}$
	$1\frac{1}{2}$	$2\frac{7}{12}$	$1\frac{11}{12}$

Write the missing denominators.
Ring the two fractions in each set with the least common denominator.

1. $\frac{1}{2} = \frac{2}{4} = \boxed{\frac{3}{6}} = \frac{4}{8} = \frac{5}{10} = \frac{6}{12}$

   $\frac{1}{3} = \boxed{\frac{2}{6}} = \frac{3}{9} = \frac{4}{12} = \frac{5}{15} = \frac{6}{18}$

2. $\frac{1}{5} = \frac{2}{10} = \frac{3}{15} = \frac{4}{20} = \frac{5}{25} = \boxed{\frac{6}{30}}$

   $\frac{1}{6} = \frac{2}{12} = \frac{3}{18} = \frac{4}{24} = \boxed{\frac{5}{30}} = \frac{6}{36}$

3. $\frac{1}{4} = \frac{2}{8} = \frac{3}{12} = \frac{4}{16} = \boxed{\frac{5}{20}} = \frac{6}{24}$

   $\frac{1}{5} = \frac{2}{10} = \frac{3}{15} = \boxed{\frac{4}{20}} = \frac{5}{25} = \frac{6}{30}$

4. $\frac{1}{8} = \frac{2}{16} = \boxed{\frac{3}{24}} = \frac{4}{32} = \frac{5}{40} = \frac{6}{48}$

   $\frac{1}{12} = \boxed{\frac{2}{24}} = \frac{3}{36} = \frac{4}{48} = \frac{5}{60} = \frac{6}{72}$

Multiply the denominators to get a common denominator.

5. $\frac{1}{2}$ and $\frac{1}{3}$ _6_

6. $\frac{1}{5}$ and $\frac{1}{6}$ _30_

7. $\frac{1}{4}$ and $\frac{1}{5}$ _20_

8. $\frac{1}{8}$ and $\frac{1}{12}$ _96_

The fractions in problems 1, 2, 3, and 4 are the same as those in problems 5, 6, 7, and 8.

9. Did you get the same common denominator

a	**b**	**c**	**d**
in problems 1 and 5? _Yes_	in problems 2 and 6? _Yes_	in problems 3 and 7? _Yes_	in problems 4 and 8? _no_

Use any method you like to find common denominators.
Add. Write the simplest name for each answer.

	a	**b**	**c**	**d**
10.	$\frac{1}{4} + \frac{3}{5} = \frac{17}{20}$	$\frac{4}{5} + \frac{2}{3} = 1\frac{7}{15}$	$\frac{1}{2} + \frac{5}{6} = 1\frac{1}{3}$	$\frac{1}{4} + \frac{1}{3} = \frac{7}{12}$

Subtract. Write the simplest name for each answer.

	a	**b**	**c**	**d**
11.	$\frac{5}{8} - \frac{1}{4} = \frac{3}{8}$	$\frac{3}{4} - \frac{1}{2} = \frac{1}{4}$	$\frac{5}{6} - \frac{3}{4} = \frac{1}{12}$	$\frac{7}{10} - \frac{2}{3} = \frac{1}{30}$
12.	$\frac{2}{3} - \frac{1}{5} = \frac{7}{15}$	$\frac{7}{8} - \frac{2}{5} = \frac{19}{40}$	$\frac{3}{16} - \frac{1}{8} = \frac{1}{16}$	$\frac{4}{5} - \frac{1}{4} = \frac{11}{20}$

Choose a common denominator from the listed numbers.
Rename the fractions. Then add or subtract.
Write the simplest name for each answer.

a	b	c

1. $\frac{1}{4} + \frac{2}{3}$ 4, 8, (12), 16

$$\frac{3}{12} + \frac{8}{12} = \frac{11}{12}$$

$\frac{4}{5} - \frac{1}{3}$ 5, 10, (15), 30

$$\frac{12}{15} - \frac{5}{15} = \frac{7}{15}$$

$\frac{3}{8} - \frac{1}{4}$ (8), 16, 24, 32

$$\frac{3}{8} - \frac{2}{8} = \frac{1}{8}$$

2. $\frac{7}{10} + \frac{2}{5}$ (10), 20, 30, 40

$$\frac{7}{10} + \frac{4}{10} = \frac{11}{10} = 1\frac{1}{10}$$

$\frac{5}{6} + \frac{3}{4}$ 6, (12), 18, 24

$$\frac{10}{12} + \frac{9}{12} = \frac{19}{12} = 1\frac{7}{12}$$

$\frac{7}{9} - \frac{3}{4}$ 9, 18, 27, (36)

$$\frac{28}{36} - \frac{27}{36} = \frac{1}{36}$$

Answer the questions. Show how you got your answers.

3. One boy ate $\frac{1}{4}$ of a cake. Another boy ate $\frac{2}{5}$ of it. What fraction of the whole cake has been eaten?

$$\frac{1}{4} + \frac{2}{5} = \frac{5}{20} + \frac{8}{20} = \frac{13}{20}$$

4. There are 6 bags of feed. Joe fed his horses $2\frac{3}{4}$ bags. How much feed is left?

$$6 - 2\frac{3}{4} = 5\frac{4}{4} - 2\frac{3}{4} = 3\frac{1}{4}$$

What fraction of the cake is left?

$$1 - \frac{13}{20} = \frac{20}{20} - \frac{13}{20} = \frac{7}{20}$$

The next day, Joe fed his horses the same amount. How much feed is left now?

$$3\frac{1}{4} - 2\frac{3}{4} = 2\frac{5}{4} - 2\frac{3}{4} = \frac{2}{4} = \frac{1}{2}$$

Add. Rename the sum as a whole number or a mixed number if you can.

① $\frac{1}{2} + \frac{6}{5} = $ $1\frac{7}{10}$

② $\frac{4}{6} + \frac{5}{6} = $ $1\frac{1}{2}$

③ $3\frac{1}{8} + 2\frac{1}{2} = $ $5\frac{5}{8}$

④ $\frac{1}{4} + \frac{6}{8} = $ 1

⑤ $\frac{7}{3} + \frac{2}{4} = $ $2\frac{5}{6}$

⑥ $4\frac{2}{5} + 3\frac{2}{3} = $ $8\frac{1}{15}$

Subtract. Write the simplest name for each answer.

⑦ $\frac{5}{8} - \frac{3}{8} = $ $\frac{1}{4}$

⑧ $\frac{7}{10} - \frac{1}{5} = $ $\frac{1}{2}$

⑨ $5\frac{1}{2} - 3\frac{1}{4} = $ $2\frac{1}{4}$

⑩ $9\frac{4}{5} - \frac{1}{3} = $ $9\frac{7}{15}$

⑪ $1\frac{5}{6} - 1\frac{2}{9} = $ $\frac{11}{18}$

⑫ $7\frac{1}{2} - 2\frac{1}{6} = $ $5\frac{1}{3}$

Multiply. Write the simplest name for each product.

	a	b	c	d
1.	$7 \times \frac{3}{5} =$ $4\frac{1}{5}$	$3 \times \frac{2}{3} =$ 2	$\frac{7}{8} \times 4 =$ $3\frac{1}{2}$	$2 \times \frac{1}{4} =$ $\frac{1}{2}$
2.	$\frac{8}{9} \times 6 =$ $5\frac{1}{3}$	$8 \times \frac{3}{4} =$ 6	$\frac{2}{7} \times 4 =$ $1\frac{1}{7}$	$6 \times \frac{2}{5} =$ $2\frac{2}{5}$
3.	$8 \times \frac{1}{12} =$ $\frac{2}{3}$	$10 \times \frac{10}{12} =$ $8\frac{1}{3}$	$10 \times \frac{3}{10} =$ 3	$4 \times \frac{1}{6} =$ $\frac{2}{3}$
4.	$4 \times \frac{3}{8} =$ $1\frac{1}{2}$	$3 \times \frac{2}{9} =$ $\frac{2}{3}$	$6 \times \frac{5}{3} =$ 10	$\frac{1}{2} \times 5 =$ $2\frac{1}{2}$
5.	$\frac{1}{10} \times 6 =$ $\frac{3}{5}$	$\frac{1}{10} \times 10 =$ 1	$\frac{5}{8} \times 3 =$ $1\frac{7}{8}$	$9 \times \frac{4}{5} =$ $7\frac{1}{5}$
6.	$\frac{3}{8} \times \frac{2}{9} =$ $\frac{1}{12}$	$\frac{4}{7} \times \frac{5}{6} =$ $\frac{10}{21}$	$\frac{3}{4} \times \frac{1}{5} =$ $\frac{3}{20}$	$\frac{2}{3} \times \frac{7}{10} =$ $\frac{7}{15}$
7.	$\frac{2}{5} \times \frac{1}{3} =$ $\frac{2}{15}$	$\frac{1}{8} \times \frac{5}{6} =$ $\frac{5}{48}$	$\frac{1}{2} \times \frac{3}{4} =$ $\frac{3}{8}$	$\frac{2}{3} \times \frac{1}{3} =$ $\frac{2}{9}$
8.	$\frac{5}{6} \times \frac{5}{6} =$ $\frac{25}{36}$	$\frac{8}{21} \times \frac{3}{10} =$ $\frac{4}{35}$	$\frac{2}{10} \times \frac{3}{4} =$ $\frac{3}{20}$	$\frac{1}{4} \times \frac{1}{9} =$ $\frac{1}{36}$
9.	$\frac{7}{8} \times \frac{1}{2} =$ $\frac{7}{16}$	$\frac{2}{3} \times \frac{2}{5} =$ $\frac{4}{15}$	$\frac{1}{2} \times \frac{1}{3} =$ $\frac{1}{6}$	$\frac{3}{5} \times \frac{3}{8} =$ $\frac{9}{40}$

a	b
10. One half of the job is done.	Pam uses $\frac{7}{10}$ roll of film daily
You did $\frac{3}{4}$ of the work.	to shoot pictures for her paper.
What part of the entire job did you do?	How much film does she use in 5 days?
$\frac{3}{8}$	$3\frac{1}{2}$ rolls of film
11. $\frac{1}{2}$ h practising the piano.	2 h spent doing homework.
$\frac{1}{3}$ of this time playing scales.	$\frac{2}{3}$ of this time is spent reading.
How much time is spent on scales?	How much time is spent reading?
$\frac{1}{6}$ h	$1\frac{1}{3}$ h

Rename these mixed numbers as fractions.

	a	b	c	d	e
1.	$3\frac{2}{5} = \frac{17}{5}$	$6\frac{1}{6} = \frac{37}{6}$	$2\frac{3}{8} = \frac{19}{8}$	$7\frac{3}{4} = \frac{31}{4}$	$2\frac{5}{6} = \frac{17}{6}$
2.	$2\frac{3}{4} = \frac{11}{4}$	$1\frac{1}{2} = \frac{3}{2}$	$7\frac{5}{8} = \frac{61}{8}$	$4\frac{2}{5} = \frac{22}{5}$	$1\frac{2}{3} = \frac{5}{3}$
3.	$5\frac{1}{3} = \frac{16}{3}$	$1\frac{1}{10} = \frac{11}{10}$	$4\frac{1}{2} = \frac{9}{2}$	$5\frac{7}{16} = \frac{87}{16}$	$2\frac{7}{9} = \frac{25}{9}$

Multiply. Write the simplest name for each product.

	a	b	c
4.	$\frac{1}{4} \times 2\frac{2}{3} = \frac{2}{3}$	$2\frac{3}{4} \times \frac{1}{7} = \frac{11}{28}$	$\frac{1}{6} \times 1\frac{2}{5} = \frac{7}{30}$
5.	$\frac{3}{8} \times 5\frac{1}{2} = 2\frac{1}{16}$	$3\frac{1}{2} \times \frac{2}{3} = 2\frac{1}{3}$	$\frac{3}{4} \times 2\frac{2}{5} = 1\frac{4}{5}$
6.	$1\frac{1}{2} \times \frac{1}{2} = \frac{3}{4}$	$2\frac{1}{2} \times \frac{5}{6} = 2\frac{1}{12}$	$\frac{3}{8} \times 1\frac{1}{5} = \frac{9}{20}$
7.	$4 \times 1\frac{1}{5} = 4\frac{4}{5}$	$3 \times 5\frac{1}{2} = 16\frac{1}{2}$	$7 \times 3\frac{2}{3} = 25\frac{2}{3}$
8.	$1\frac{2}{3} \times 4 = 6\frac{2}{3}$	$2\frac{3}{4} \times 4 = 11$	$3\frac{2}{5} \times 3 = 10\frac{1}{5}$
9.	$2\frac{5}{6} \times 5 = 14\frac{1}{6}$	$1\frac{1}{6} \times 3 = 3\frac{1}{2}$	$4\frac{3}{10} \times 10 = 43$
10.	$1\frac{4}{5} \times 7 = 12\frac{3}{5}$	$3\frac{5}{8} \times 8 = 29$	$1\frac{1}{4} \times 5 = 6\frac{1}{4}$

Multiply. Write the simplest name for each product.

① $4 \times 3\frac{1}{3} = 13\frac{1}{3}$ ② $3\frac{1}{2} \times 5 = 17\frac{1}{2}$ ③ $2\frac{3}{4} \times 2 = 5\frac{1}{2}$

④ $10 \times 6\frac{1}{3} = 63\frac{1}{3}$ ⑤ $1\frac{2}{5} \times 3 = 4\frac{1}{5}$

1. Complete.

a	b	c

$$\begin{array}{r} 38 \\ \times\ 25\frac{1}{2} \end{array}$$

$\underline{\quad 19 \quad}$ $\left(\frac{1}{2} \times 38\right)$

$\underline{\quad 190 \quad}$ (5×38)

$\underline{\quad 760 \quad}$ (20×38)

$\underline{\quad 969 \quad}$

$$\begin{array}{r} 57 \\ \times\ 15\frac{1}{3} \end{array}$$

$\underline{\quad 19 \quad}$ $\left(\frac{1}{3} \times 57\right)$

$\underline{\quad 285 \quad}$ (5×57)

$\underline{\quad 570 \quad}$ (10×57)

$\underline{\quad 874 \quad}$

$$\begin{array}{r} 96 \\ \times\ 43\frac{1}{4} \end{array}$$

$\underline{\quad 24 \quad}$ $\left(\frac{1}{4} \times 96\right)$

$\underline{\quad 288 \quad}$ (3×96)

$\underline{\quad 3840 \quad}$ (40×96)

$\underline{\quad 4152 \quad}$

Multiply. Write the simplest name for each product.

a · b

2. $2\frac{1}{2} \times 2\frac{1}{2} = \underline{\quad 6\frac{1}{4} \quad}$ $1\frac{2}{3} \times 3\frac{1}{2} = \underline{\quad 5\frac{5}{6} \quad}$

3. $4\frac{1}{3} \times 1\frac{2}{3} = \underline{\quad 7\frac{2}{9} \quad}$ $2\frac{2}{3} \times 3\frac{1}{4} = \underline{\quad 8\frac{2}{3} \quad}$

4. $2\frac{1}{2} \times 1\frac{1}{3} = \underline{\quad 3\frac{1}{3} \quad}$ $2\frac{1}{4} \times 1\frac{2}{3} = \underline{\quad 3\frac{3}{4} \quad}$

5. $1\frac{1}{2} \times 1\frac{1}{2} = \underline{\quad 2\frac{1}{4} \quad}$ $3\frac{1}{2} \times 1\frac{1}{3} = \underline{\quad 4\frac{2}{3} \quad}$

6. $2\frac{1}{2} \times 1\frac{1}{5} = \underline{\quad 3 \quad}$ $2\frac{2}{3} \times 2\frac{1}{4} = \underline{\quad 6 \quad}$

Multiply each number by $1\frac{1}{3}$.

a · b · c · d

7. $1 \times 1\frac{1}{3} = 1\frac{1}{3}$ $2 \times 1\frac{1}{3} = 2\frac{2}{3}$ $3 \times 1\frac{1}{3} = 4$ $4 \times 1\frac{1}{3} = 5\frac{1}{3}$

8. $\frac{1}{2} \times 1\frac{1}{3} = \frac{2}{3}$ $\frac{1}{3} \times 1\frac{1}{3} = \frac{4}{9}$ $\frac{2}{3} \times 1\frac{1}{3} = \frac{8}{9}$ $1\frac{1}{2} \times 1\frac{1}{3} = 2$

Multiply each number by $2\frac{1}{2}$.

a · b · c · d

9. $\frac{1}{5} \times 2\frac{1}{2} = \frac{1}{2}$ $\frac{2}{5} \times 2\frac{1}{2} = 1$ $\frac{3}{5} \times 2\frac{1}{2} = 1\frac{1}{2}$ $\frac{4}{5} \times 2\frac{1}{2} = 2$

10. $1\frac{1}{3} \times 2\frac{1}{2} = 3\frac{1}{3}$ $3\frac{1}{2} \times 2\frac{1}{2} = 8\frac{3}{4}$ $2\frac{3}{4} \times 2\frac{1}{2} = 6\frac{7}{8}$ $2\frac{2}{3} \times 2\frac{1}{2} = 6\frac{2}{3}$

Write the simplest names for these fractions.

	a	b	c	d	e	f
1.	$\frac{9}{12} = \frac{3}{4}$	$\frac{6}{8} = \frac{3}{4}$	$\frac{15}{20} = \frac{3}{4}$	$\frac{10}{24} = \frac{5}{12}$	$\frac{8}{10} = \frac{4}{5}$	$\frac{6}{16} = \frac{3}{8}$

Rename each fraction as a mixed number. (Give the simplest name.)

	a	b	c	d	e	f
2.	$\frac{6}{5} = 1\frac{1}{5}$	$\frac{9}{4} = 2\frac{1}{4}$	$\frac{7}{3} = 2\frac{1}{3}$	$\frac{20}{8} = 2\frac{1}{2}$	$\frac{9}{2} = 4\frac{1}{2}$	$\frac{14}{6} = 2\frac{1}{3}$

Rename each mixed number as a fraction.

	a	b	c	d	e	f
3.	$2\frac{3}{4} = \frac{11}{4}$	$5\frac{3}{8} = \frac{43}{8}$	$1\frac{2}{5} = \frac{7}{5}$	$3\frac{1}{2} = \frac{7}{2}$	$2\frac{9}{10} = \frac{29}{10}$	$4\frac{1}{3} = \frac{13}{3}$

When you compute, write the simplest name for each answer.
Add.

	a	b	c	d
4.	$\frac{3}{5} + \frac{4}{5} = 1\frac{2}{5}$	$\frac{5}{8} + \frac{1}{8} = \frac{3}{4}$	$\frac{1}{3} + \frac{5}{6} = 1\frac{1}{6}$	$\frac{7}{10} + \frac{1}{2} = 1\frac{1}{5}$
5.	$\frac{2}{3} + \frac{1}{4} = \frac{11}{12}$	$\frac{5}{6} + \frac{3}{10} = 1\frac{2}{15}$	$2\frac{3}{4} + 3\frac{1}{5} = 5\frac{19}{20}$	$7\frac{2}{3} + 4\frac{4}{5} = 12\frac{7}{15}$

Subtract.

	a	b	c	d
6.	$\frac{7}{8} - \frac{3}{8} = \frac{1}{2}$	$\frac{5}{6} - \frac{1}{6} = \frac{2}{3}$	$\frac{3}{4} - \frac{1}{5} = \frac{11}{20}$	$\frac{8}{9} - \frac{1}{3} = \frac{5}{9}$
7.	$\frac{7}{10} - \frac{1}{2} = \frac{1}{5}$	$\frac{2}{3} - \frac{1}{10} = \frac{17}{30}$	$3\frac{5}{8} - 1\frac{1}{8} = 2\frac{1}{2}$	$7\frac{1}{4} - 5\frac{3}{4} = 1\frac{1}{2}$

Multiply.

	a	b	c	d
8.	$\frac{1}{2} \times 6 = 3$	$2 \times \frac{5}{7} = 1\frac{3}{7}$	$4 \times \frac{2}{3} = 2\frac{2}{3}$	$\frac{3}{4} \times 10 = 7\frac{1}{2}$
9.	$\frac{1}{3} \times \frac{3}{5} = \frac{1}{5}$	$\frac{3}{4} \times \frac{1}{2} = \frac{3}{8}$	$\frac{5}{8} \times 1\frac{1}{3} = \frac{5}{6}$	$1\frac{3}{4} \times 3\frac{1}{6} = 5\frac{13}{24}$

The class wants to buy a tree to plant in the school yard.
The students vote to decide which kind of tree to buy.
This is a record of the votes.

Kind of tree	Number of votes	Standard numeral
Maple	TH// //	7
Oak	//	2
Birch	///	3
Locust	//	2
Willow	/	1
Ash	/	1
Spruce	TH//	5

1. Write the standard numeral for each tally.
2. What kind of tree will be bought? _Maple_

Now the class must make another decision. What kind of maple tree should be bought?
The students vote again. This is how they voted.

Norway Maple	Sugar Maple	Sugar Maple	Crimson King Maple	Norway Maple	Silver Maple	Sugar Maple
Sugar Maple	Crimson King Maple	Sugar Maple	Norway Maple	Sugar Maple	Sugar Maple	Norway Maple
Sugar Maple	Sugar Maple	Crimson King Maple	Norway Maple	Sugar Maple	Silver Maple	Sugar Maple

3. Tally the votes.

Kind of maple tree	Number of votes	Standard numeral
Norway	TH//	5
Sugar	TH// TH// /	11
Crimson King	///	3
Silver	//	2

4. Write the standard numeral for each tally.

5. What kind of maple tree will be bought? _Sugar_

Favourite Pets

Number of students

Cats　　Dogs　　Gerbils　　Fish　　Birds　　Horses
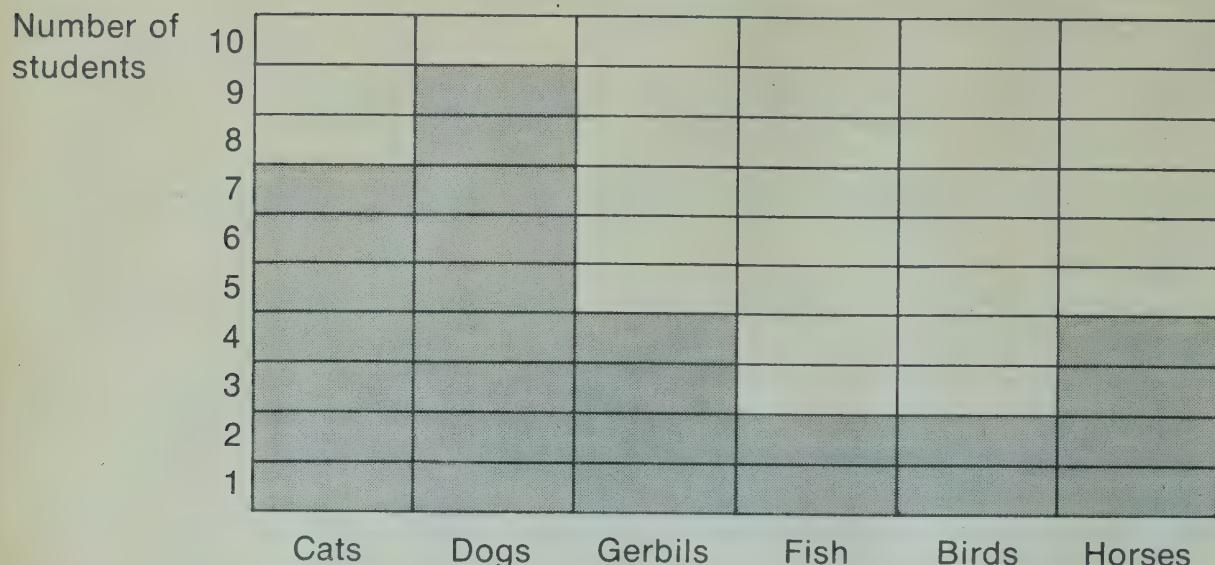
Source: A classroom poll, May 10, 1976

1. Which pet was the favourite? _Dogs_

2. Which pet was the second in popularity? _Cats_

3. Which pets tied for third? _Gerbils and horses_

4. How many students took part in the poll? _28_

5. Make a similar bar graph in the space below. Follow these steps. **a)** Decide on an idea for the graph. **b)** Collect and organize the data. **c)** Make the graph. **d)** Check the title, grid, horizontal and vertical labels, and source of information.

Answers will vary.

The Noon Shadow Lengths of a Post

Number of metres

1.5
1.2
0.9
0.6
0.3
0

January   March   May
28   25   14
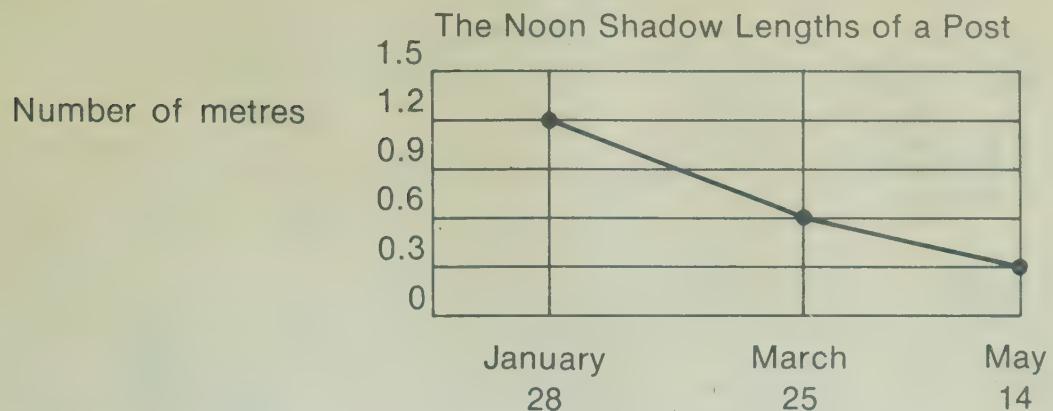
Source: John Miller's Science Journal, May 1976

1. How long was the shadow on January 28? _____ *1.2 m* _____

2. How long was the shadow on March 25? _____ *0.6 m* _____

3. How long was the shadow on May 14? _____ *0.3 m* _____

4. How does the shadow change with the seasons? *The shadow becomes shorter as winter moves to spring.*

5. Make a line graph that shows how something changes with time. Follow these steps.
   a) Decide on an idea for the graph. **b)** Collect and organize the data. **c)** Make the graph. **d)** Check the title, grid, horizontal and vertical labels, and source of information.
   Answers will vary.

The students at the Queen Street School gathered some data on sports events at their school. They used graphs to report this information.

Results of Push-ups
(11-13-years-old)

Number of push-ups (vertical axis)

Age (horizontal axis): 11 12 13 | 11 12 13 | 11 12 13 | 11 12 13
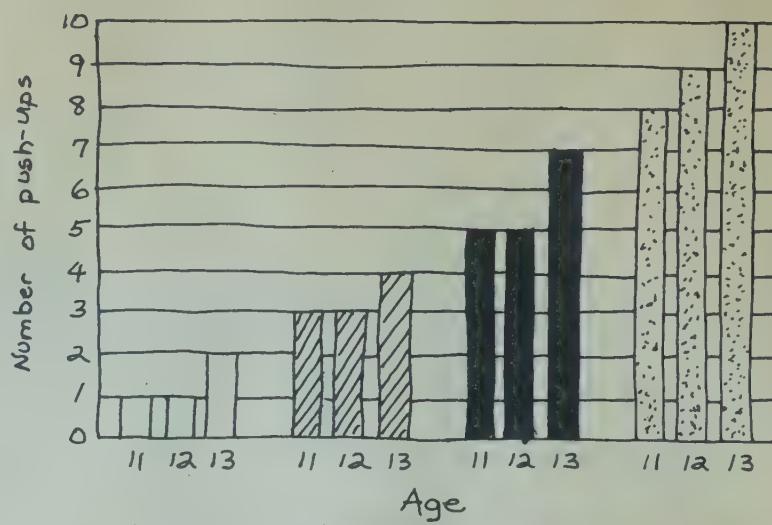
Key:
☐ Poor　　■ Good
▨ Satisfactory　▨ Excellent

1. How many push-ups

   a would be a good score for an 11-year-old?
   _____5_____

   b would be a satisfactory score for a 13-year-old?
   _____4_____

   c would be an excellent score for a 12-year-old?
   _____9_____

   d would be a poor score for a 12-year-old?
   _____1_____

Results for Ball Throw
(10-14-year-olds)

Distance of throw (metres) (vertical axis): 36 33 30 27 24 21 18 15

Excellent
Good
Satisfactory
Poor

Age (horizontal axis): 10 11 12 13 14
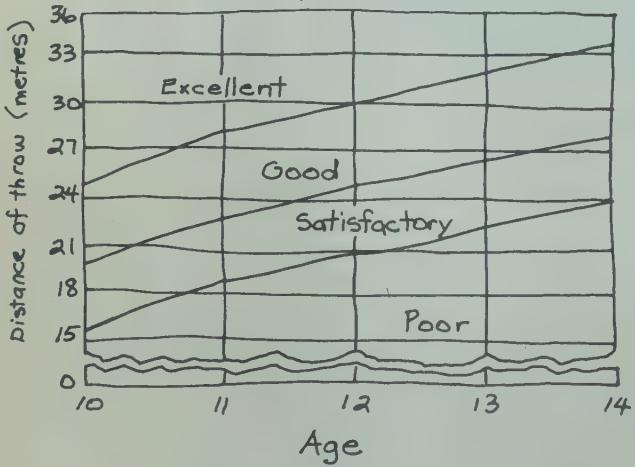
Average Results in Standing Broad Jump
(10-year-olds)

More than 176 cm 10%
171 cm to 175 cm 15%
161 cm to 170 cm 20%
Less than 160 cm 55%
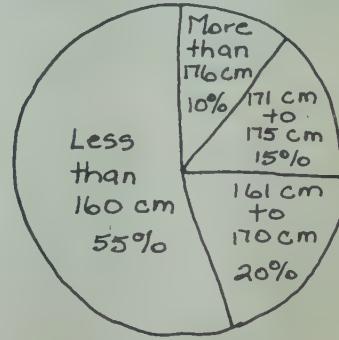
2. What rating would be given to a 23 m throw

   a by a 10-year-old?　*Good*

   b by a 12-year-old?　*Satisfactory*

   c by a 14-year-old?　*Poor*

3. How far can most 10-year-olds jump doing a standing broad jump?

   Less than 160 cm

Compute the mean of each set of numbers.
Compare the mean of group A with the mean of group B using >, <, or=.

1. Group A 8, 3, 4, 5   5
   Group B 3, 4, 7, 6, 5 5

2. Group A 10, 30, 40, 90, 70 48
   Group B 50, 30, 50, 40, 70 48

The mean of (=) the mean of
Group A   Group B

The mean of (=) the mean of
Group A   Group B

3. Group A 13, 24, 0, 9, 19, 7 12
   Group B 15, 15, 3, 10, 4, 11, 12, 2 9

4. Group A 8, 3, 9, 5, 5, 4, 6, 10, 4 6
   Group B 7, 4, 5, 4, 8, 5, 2, 6, 6, 3 5

The mean of (>) the mean of
Group A   Group B

The mean of (>) the mean of
Group A   Group B

> The range of a set of numbers shows the difference between the smallest number and the largest number in the set.

a	b

Set A   4, 3, 7, 5, 6   Set B   300, 700, 1500, 1200

1. What is the largest number in A? __7__   What is the largest number in B? __1500__

2. What is the smallest number in A? __3__   What is the smallest number in B? __300__

3. What is the range of set A? __4__   What is the range of set B? __1200__

Find the range and the mean of each set of numbers.

4. 5, 12, 8, 17, 3   5. 52, 34, 56, 30

range __14__ mean __9__   range __26__ mean __43__

6. 24, 25, 21, 22, 27, 25   7. 3, 0, 2, 4, 5, 0, 3, 1, 3, 4

range __6__ mean __24__   range __5__ mean __$2\frac{1}{2}$__

8. 97, 83, 94, 100, 86   9. 99, 101, 102, 98

range __17__ mean __92__   range __4__ mean __100__

Study the chart. Answer the questions.

Facts about Some Zoos of the World					
Location	Year opened	Size (hectare)	Kinds of animals (number)	Approximate number of animals	Approximate number of visitors (in a year)
London	1829	15	1549	5644	2 000 000
Melbourne		22	319	2362	682 000
Washington	1889	71	825	2395	4 059 804
Toronto	1974	283	400	3500	1 300 000
Sydney		8	577	5128	883 262
Philadelphia	1859	17	562	1527	1 000 000

Name the zoo that

1. has the most land.

Toronto

2. has the most animals.

London

3. has the most visitors.

Washington

4. has the largest variety of animals.

London

Are there enough data to make a graph

5. showing which zoo is the oldest?

_No_

6. showing which zoo has the most land?

Yes

7. showing which zoo has the most animals? _Yes_

8. showing the different kinds of animals each zoo has? _Yes_

9. showing the increase in visitors for each zoo from year to year? _No_

scale

| 0 | 12 | 24 | 36 | 48 | 60 |

km

a

scale

| 0 | 5 | 10 | 15 | 20 | 25 |

km

b
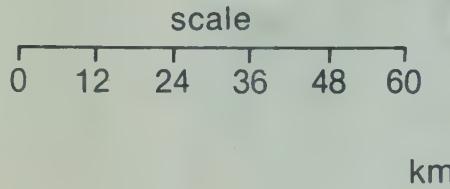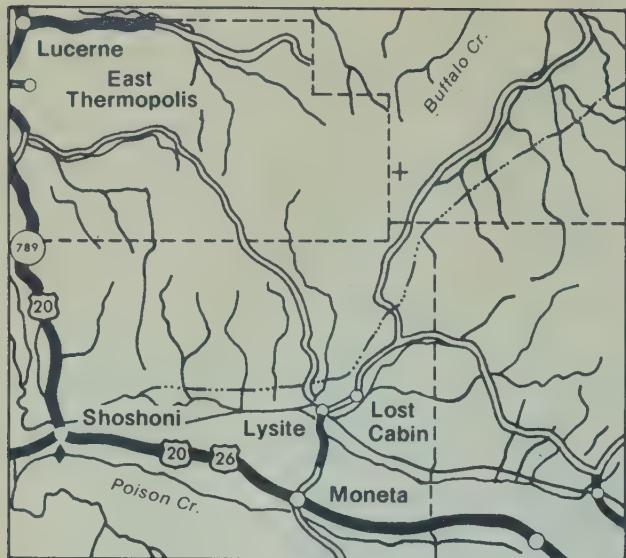
Answer to the nearest kilometre.

1. Approximately how far is it from Shoshoni to Moneta?

_36 km_

2. Approximately how far is it from Moneta to Lysite?

_12 km_

3. Approximately how far is it from Lysite to Lost Cabin?

_6 km_

4. Travelling at a speed of 80 km/h about how long would it take you to go from Shoshoni to Moneta?

about ½ h or 30 min
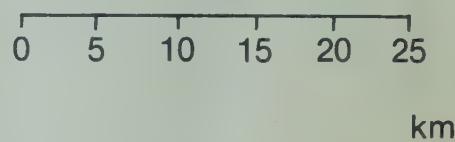
Answer to the nearest kilometre.

Approximately how far is it from Grândola to Alcácer do Sal?

_25 km_

Approximately how far is it from Alcácer do Sal to Vale dos Reis?

_5 km_

Approximately how far is it from S. Ramão to Rio de Moinhos?

_5 km_

Travelling at a speed of 80 km/h about how long would it take you to go from Grândola to Alcácer do Sal?

about ⅓ h or 20 min

1.

a
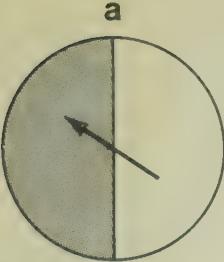
This spinner face
has 2 parts.
What is the probability
of landing on green?

__1__ chance(s) out of 2

b
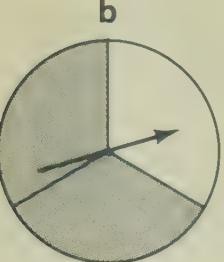
This spinner face
has 3 parts.
What is the probability
of landing on white?

__1__ chance(s) out of 3

c
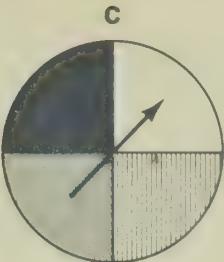
This spinner face
has 4 parts.
What is the probability
of landing on white?

__1__ chance(s) out of 4

2.

a
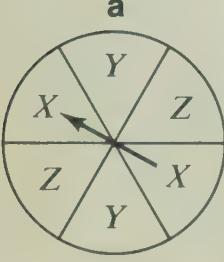
This spinner face
has 6 parts.
What is the probability
of landing on X?

__2__ chance(s) out of 6

b
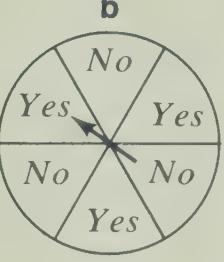
This spinner face
has 6 parts.
What is the probability
of landing on Yes?

__3__ chance(s) out of __6__

c
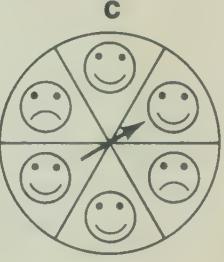
This spinner face
has 6 parts.
What is the probability
of landing on ☺ ?

__4__ chance(s) out of __6__
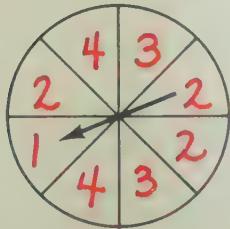
3. This spinner face has 8 parts.
Label the parts 1, 2, 3, and 4
so that the probability of getting
   1 is 1 chance out of 8.
   2 is 3 chances out of 8.
   3 is 2 chances out of 8.
   4 is 2 chances out of 8.
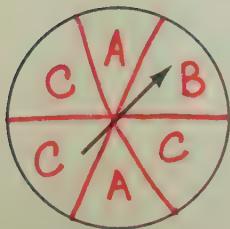
4. Divide the spinner face. Label the
parts A, B, and C so that the
probability of getting
   A is 2 chances out of 6.
   B is 1 chance out of 6.
   C is 3 chances out of 6.
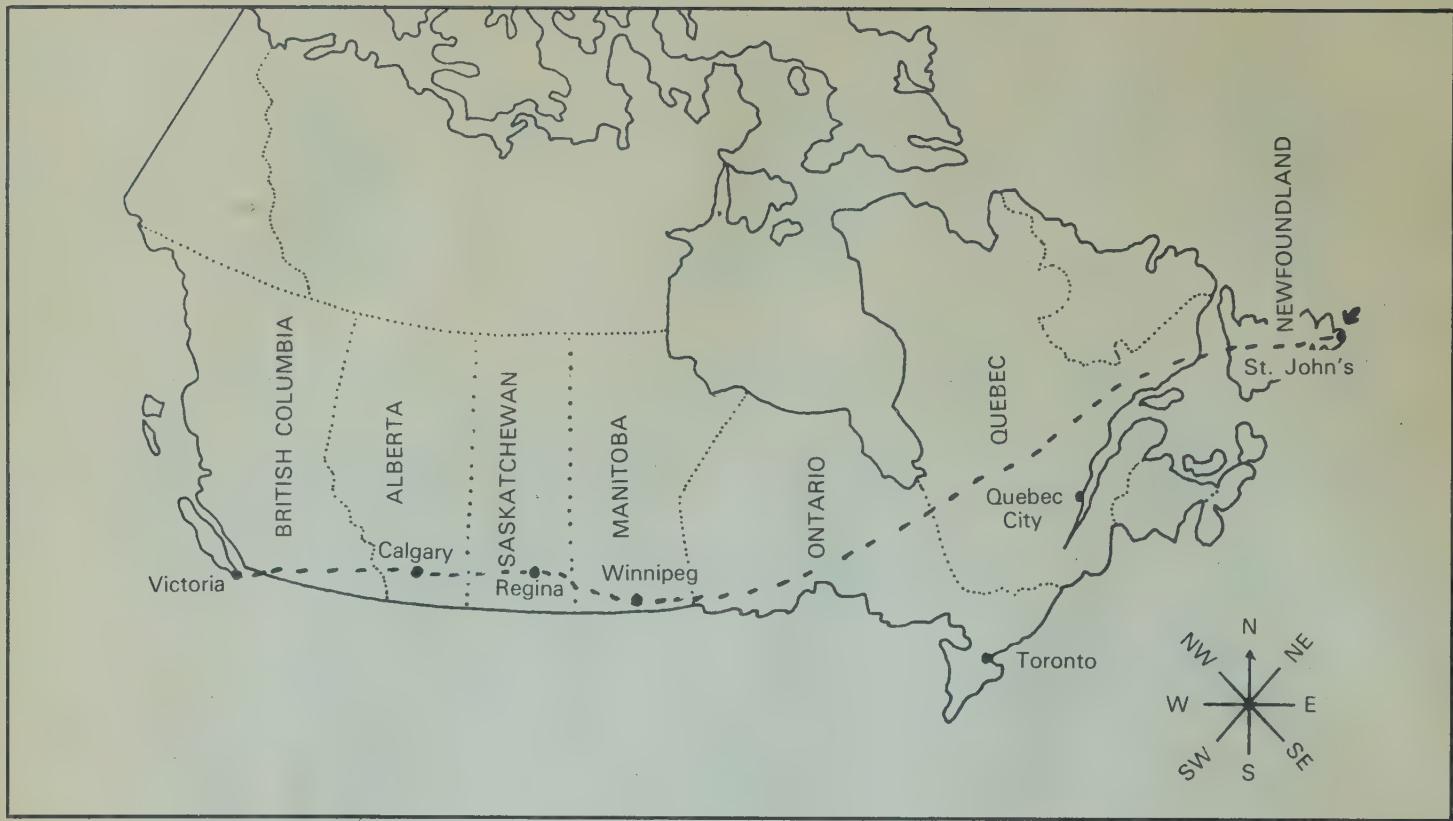
1. You are travelling by plane along the path marked by the dotted line.

   a Start at the arrow and name every province you fly over.
   Newfoundland, Quebec, Ontario, Manitoba, Saskatchewan, Alberta, British Columbia

   b What direction is Victoria from Calgary? *West*

   c What direction is Toronto from Quebec City? *Southwest*

   d Does the map tell you the distance from St. John's to Victoria? *No*

2. 10, 34, 16, 5, 23, 20, 11
   What is the range? *29*   What is the mean? *17*

3. A deck of cards has 13 hearts. There are 52 cards in all in a deck. Would you expect to pick a heart from the deck? *No*

Trace each polygon. Fold to find the lines of symmetry.
If the shape can be folded into two halves that match, label the polygon *symmetrical*. If
the shape cannot be folded into matching halves, label the polygon *not symmetrical*.
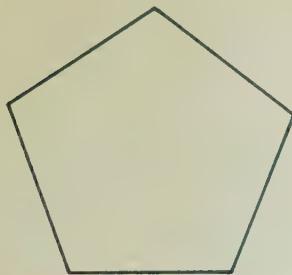
1. *Symmetrical*
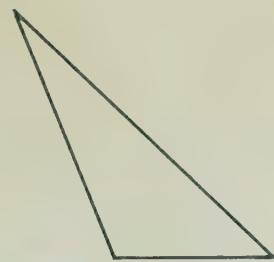
2. *Not symmetrical*
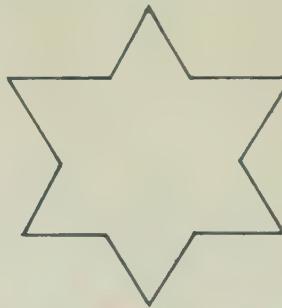
3. *Symmetrical*
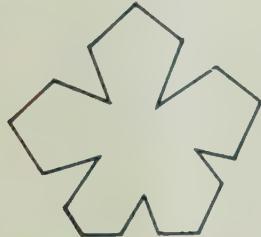
4. *Not symmetrical*
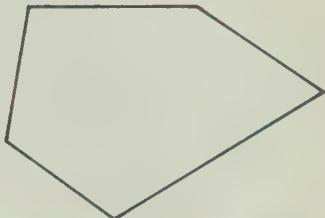
5. *Not symmetrical*
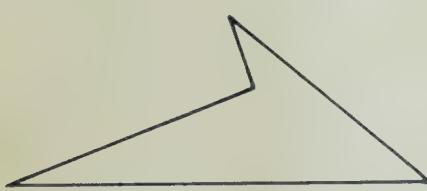
6. *Not symmetrical*

7. *Symmetrical*
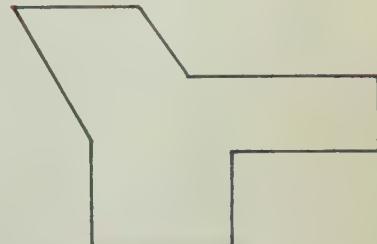
8. *Not symmetrical*
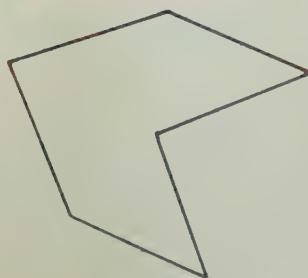
9. *Symmetrical*

10. *Symmetrical*

Each shape is symmetrical.
Each shape has at least one line of symmetry.
1. Draw a line of symmetry through each shape.
2. Go back and draw at least one more line of symmetry through as many shapes as you can.
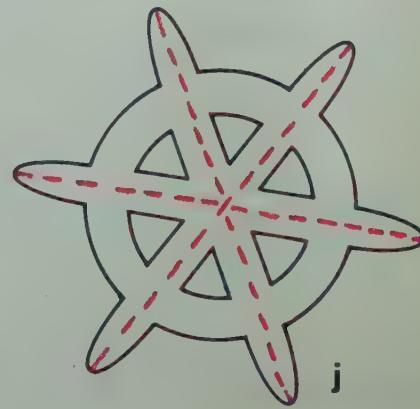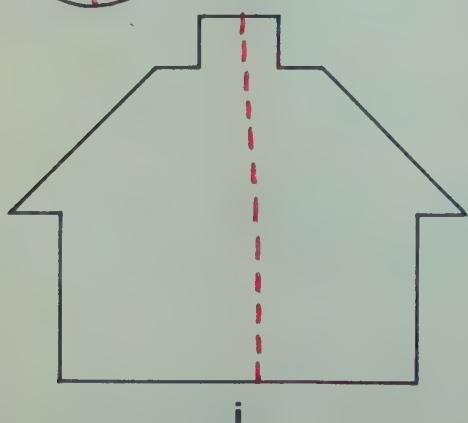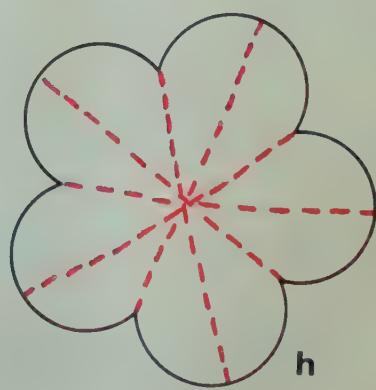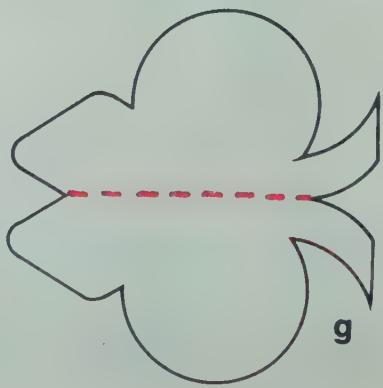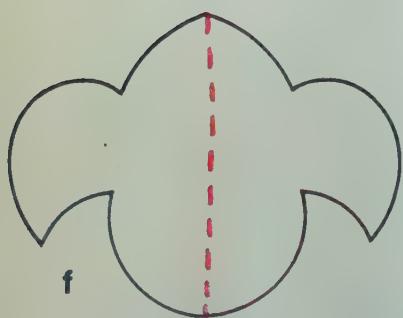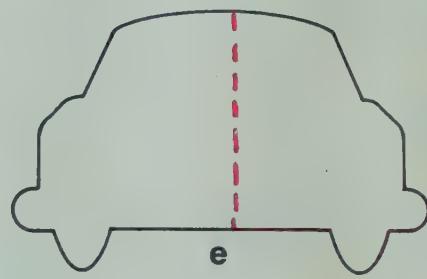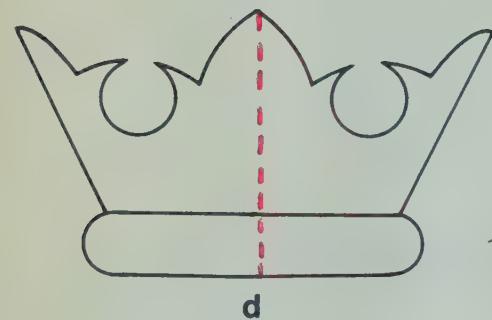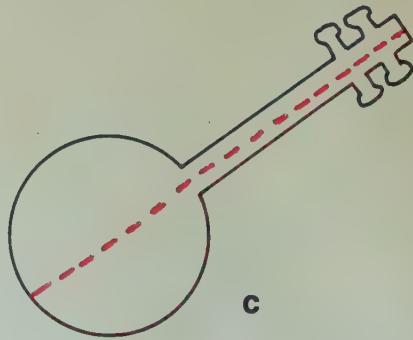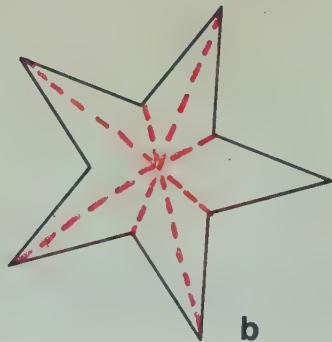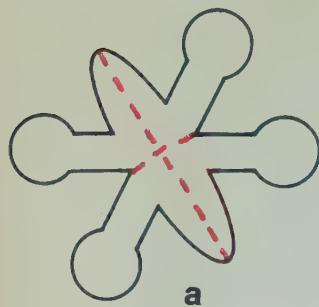
Answer the questions about each shape.

1. What name describes the shape?

a *Rectangle*

b *Triangle*

c *Hexagon*

d *Parallelogram*

2. How many sides?

a __4__

b __3__

c __6__

d __4__

3. How many angles?

a __4__

b __3__

c __6__

d __4__

4. Are the sides the same length?

a *No*

b *No*

c *Yes*

d *No*

5. Are the angles the same size?

a *Yes*

b *No*

c *Yes*

d *No*

6. Is the shape a regular figure?

a *No*

b *No*

c *Yes*

d *No*

a

b

c

d
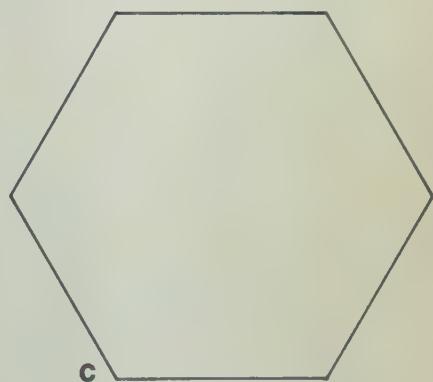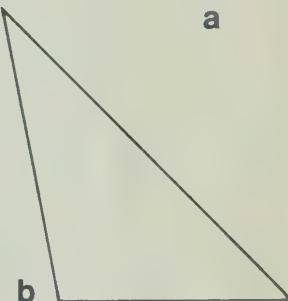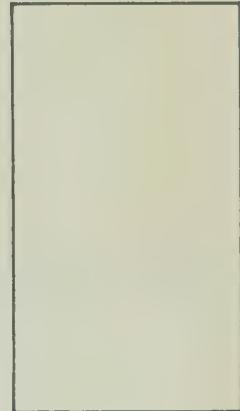
1. Name the shapes that are symmetrical.
Trace, cut, and fold if you want to be sure.
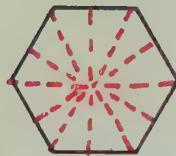
a *Symmetrical (hexagon)*

b *Not*
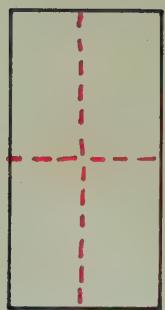
c *Symmetrical (rectangle)*
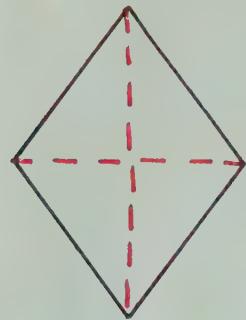
d *Symmetrical (parallelogram)*
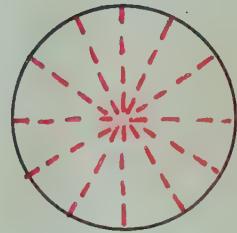
e *Symmetrical (circle)*
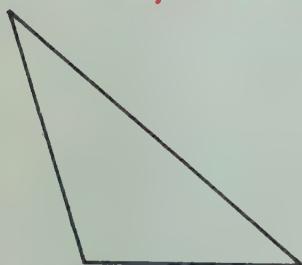
f *Not*
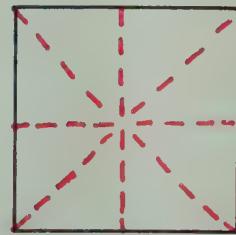
g *Symmetrical (square)*

2. Which of the shapes above have only one line of symmetry?

None of them

3. Which of the shapes above have more than two lines of symmetry?

a, e, g

Round to the nearest ten.

	a	b	c	d	e
1.	17 _20_	23 _20_	62 _60_	35 _40_	93 _90_
2.	307 _310_	173 _170_	295 _300_	719 _720_	592 _590_
3.	1219 _1220_	2012 _2010_	5101 _5100_	3009 _3010_	8998 _9000_

Round to the nearest hundred.

	a	b	c	d
4.	213 _200_	559 _600_	704 _700_	993 _1000_
5.	1579 _1600_	4081 _4100_	9325 _9300_	5085 _5100_
6.	19 406 _19 400_	47 282 _47 300_	77 512 _77 500_	30 060 _30 100_

Round to the nearest thousand.

	a	b	c	d
7.	2343 _2000_	9095 _9000_	1750 _2000_	9500 _10 000_
8.	1400 _1000_	1500 _2000_	2550 _3000_	8630 _9000_
9.	10 200 _10 000_	10 700 _11 000_	50 050 _50 000_	50 500 _51 000_

Estimate answers. Do not compute exact answers.

10. The team will be playing 7 home games this year.
4892 is the average attendance at home games.
About how many tickets should be available to sell?   _35 000_

11. Each student will need 3 separate notebooks.
The notebooks can be purchased in the school office for 79¢ each.
About how much money does a student need for the notebooks? _$2.40_

12. There are 223 students in one class, 197 students in another,
and 273 students in a third. Each student will need a compass.
About how many compasses will be needed?   _700_

Estimate the sums. Write the estimates in the parentheses.
Then compute the exact sums.

	a	**b**	**c**	**d**
1.	487 + 293 **780** (**800**)	618 + 475 **1093** (**1100**)	1724 + 995 **2719** (**3000**)	2538 + 633 **3171** (**3100**)
2.	5002 + 6987 **11989** (**12 000**)	1378 + 8931 **10 309** (**10 000**)	82 135 + 3 212 **85 347** (**85 000**)	14 555 + 35 614 **50 169** (**51 000**)
3.	215 296 + 307 **818** (**800**)	568 189 + 193 **950** (**1000**)	2973 1825 + 1990 **6788** (**7000**)	4250 1648 + 779 **6677** (**6700**)
4.	730 525 + 850 **2105** (**2100**)	985 8190 + 4477 **13 652** (**13 000**)	94 251 2 312 + 10 978 **107 541** (**107 000**)	45 008 76 386 + 9 445 **130 839** (**130 000**)

Estimate the answers. Then compute the exact answers.

5. A road sign reads:
   "Newcastle, 89 km ."
   You have driven 218 km .
   What is the total distance?

   (**300**)   **307 km**

6. Some people drove 1489 km west.
   They returned by a different route,
   which took them 1512 km .
   How far did they travel in all?

   (**3000**)   **3001 km**

7. Five classes were planning displays.
   The enrolments of these classes were 29, 22,
   21, 18, and 27. How many students were
   involved in making displays?

   (**120**)   **117 students**

Estimate the differences. Write the estimates in the parentheses.
Then compute the exact differences.

	a	**b**	**c**	**d**
1.	409 − 297 **112** (**100**)	593 − 113 **480** (**500**)	985 − 203 **782** (**800**)	770 − 395 **375** (**400**)
2.	800 − 256 **544** (**500**)	738 − 644 **94** (**100**)	500 − 177 **323** (**300**)	606 − 439 **167** (**200**)
3.	6020 − 954 **5066** (**5000**)	4804 − 872 **3932** (**3900**)	7451 − 554 **6897** (**6900**)	3000 − 518 **2482** (**2500**)
4.	7935 − 2004 **5931** (**6000**)	11 523 − 969 **10 554** (**11 000**)	4481 − 3485 **996** (**1000**)	10 458 − 477 **9981** (**10 000**)

Estimate the answers. Then compute the exact answers.

5. The committee had $157.
They spent $128 on supplies.
How much money was left?

(**30**) **$29**

6. It is 1142 km to New York.
It is 887 km to Montreal.
How much closer is Montreal?

(**200**) **255 km**

7. Shoes cost $24.
Boots cost $42.
How much more are the boots?

(**20**) **$18**

8. Martha is 151 cm tall.
She used to be 128 cm tall.
How much has she grown?

(**20**) **23 cm**

Multiply. Write only the answers.

	a	**b**	**c**	**d**
1.	40 × 20 **800**	50 × 50 **2500**	300 × 10 **3000**	700 × 60 **42 000**
2.	900 × 80 **72 000**	400 × 300 **120 000**	600 × 600 **360 000**	1000 × 800 **800 000**

Estimate the products. Then compute the exact products.

	a	**b**	**c**
3.	23 × 21 **483** (**400**)	83 × 14 **1162** (**800**)	94 × 78 **7332** (**7200**)
4.	125 × 53 **6625** (**5000**)	350 × 96 **33 600** (**40 000**)	887 × 48 **42 576** (**45 000**)
5.	491 × 121 **59 411** (**50 000**)	856 × 754 **645 424** (**720 000**)	990 × 510 **504 900** (**500 000**)

Estimate the quotients. Then compute exact quotients.

	a	b	c

(**30**)　　　　　　　　(**10**)　　　　　　　　(**9**)

1.　　　　　　　$\overset{30\ R21}{31\overline{)951}}$　　　　　　$\overset{11}{55\overline{)605}}$　　　　　　$\overset{9}{94\overline{)846}}$

(**4**)　　　　　　　　(**200**)　　　　　　　(**300**)

2.　　　　　$\overset{4\ R30}{48\overline{)222}}$　　　　　$\overset{202}{15\overline{)3030}}$　　　　$\overset{241\ R16}{24\overline{)5800}}$

(**800**)　　　　　　　(**200**)　　　　　　(**400**)

3.　　　　$\overset{819\ R19}{79\overline{)64720}}$　　　$\overset{232\ R3}{67\overline{)15547}}$　　　$\overset{419\ R14}{22\overline{)9232}}$

Add. Write the simplest name for each sum.

	a	b	c
1.	$\frac{1}{5} + \frac{2}{5} =$ __$\frac{3}{5}$__	$\frac{2}{3} + \frac{1}{4} =$ __$\frac{11}{12}$__	$\frac{3}{8} + \frac{7}{12} =$ __$\frac{23}{24}$__
2.	$\frac{3}{4} + \frac{5}{6} =$ __$1\frac{7}{12}$__	$\frac{1}{3} + \frac{1}{2} =$ __$\frac{5}{6}$__	$\frac{9}{10} + \frac{7}{10} =$ __$1\frac{3}{5}$__

	a	b	c	d
3.	$3\frac{1}{8}$ $+ 2\frac{1}{2}$ $5\frac{5}{8}$	$10\frac{4}{5}$ $+ 11\frac{2}{3}$ $22\frac{7}{15}$	3 $+ 2\frac{3}{4}$ $5\frac{3}{4}$	$12\frac{1}{6}$ $+ 7\frac{5}{6}$ 20
4.	$7\frac{4}{5}$ $+ 2\frac{1}{3}$ $10\frac{2}{15}$	$5\frac{4}{9}$ $+ 4\frac{1}{6}$ $9\frac{11}{18}$	$\frac{5}{8}$ $+ 1\frac{3}{16}$ $1\frac{13}{16}$	$50\frac{1}{2}$ $+ 35\frac{1}{2}$ 86

Subtract. Write the simplest name for each difference.

	a	b	c
5.	$\frac{5}{6} - \frac{1}{6} =$ __$\frac{2}{3}$__	$\frac{3}{4} - \frac{1}{12} =$ __$\frac{2}{3}$__	$\frac{7}{8} - \frac{4}{5} =$ __$\frac{3}{40}$__
6.	$\frac{1}{2} - \frac{1}{3} =$ __$\frac{1}{6}$__	$\frac{4}{5} - \frac{1}{10} =$ __$\frac{7}{10}$__	$\frac{7}{10} - \frac{7}{100} =$ __$\frac{63}{100}$__

	a	b	c	d
7.	$1\frac{7}{10}$ $- \frac{3}{8}$ $1\frac{13}{40}$	$8\frac{3}{4}$ $- 4\frac{1}{2}$ $4\frac{1}{4}$	$5\frac{1}{3}$ $- 2\frac{2}{3}$ $2\frac{2}{3}$	$4\frac{2}{3}$ $- 2\frac{2}{3}$ 2
8.	6 $- 3\frac{2}{5}$ $2\frac{3}{5}$	$10\frac{2}{5}$ $- 3\frac{1}{4}$ $7\frac{3}{20}$	$6\frac{1}{2}$ $- 4\frac{5}{8}$ $1\frac{7}{8}$	$14\frac{1}{3}$ $- 12$ $2\frac{1}{3}$

Multiply. Write the simplest name for each product.

	a	b	c	d
1.	$2 \times \frac{1}{3} = \ \frac{2}{3}$	$3 \times \frac{2}{5} = \ 1\frac{1}{5}$	$\frac{7}{10} \times 3 = \ 2\frac{1}{10}$	$\frac{3}{4} \times 12 = \ 9$
2.	$\frac{1}{2} \times \frac{1}{2} = \ \frac{1}{4}$	$\frac{1}{2} \times \frac{1}{4} = \ \frac{1}{8}$	$\frac{1}{3} \times \frac{3}{4} = \ \frac{1}{4}$	$\frac{2}{3} \times \frac{5}{6} = \ \frac{5}{9}$

	a	b	c
3.	$1\frac{1}{2} \times \frac{2}{3} = \ 1$	$\frac{1}{4} \times 2\frac{3}{4} = \ \frac{11}{16}$	$\frac{2}{5} \times 1\frac{1}{2} = \ \frac{3}{5}$
4.	$2\frac{1}{3} \times 5 = \ 11\frac{2}{3}$	$3\frac{1}{4} \times 6 = \ 19\frac{1}{2}$	$5 \times 1\frac{2}{3} = \ 8\frac{1}{3}$
5.	$5 \times 1\frac{3}{4} = \ 8\frac{3}{4}$	$4 \times 2\frac{1}{2} = \ 10$	$1\frac{3}{8} \times 2\frac{1}{3} = \ 3\frac{5}{24}$
6.	$1\frac{1}{2} \times 2\frac{1}{2} = \ 3\frac{3}{4}$	$5\frac{1}{4} \times 3\frac{1}{2} = \ 18\frac{3}{8}$	$1\frac{2}{3} \times 1\frac{2}{5} = \ 2\frac{1}{3}$

Solve. Write the simplest name for each answer.

7. One day: $\frac{1}{4}$ box used.

How much used in $\frac{1}{2}$ day?

$\frac{1}{8}$

8. One horse: $\frac{3}{4}$ bag of feed.

How much for 5 horses?

$3\frac{3}{4}$

9. One day: $\frac{1}{7}$ of a week.

What part of a week is $\frac{1}{2}$ day?

$\frac{1}{14}$

10. One month: $\frac{1}{12}$ of a year.

What part of a year is $\frac{1}{2}$ month?

$\frac{1}{24}$

11. One lunch: $\frac{1}{5}$ of a loaf.

How much for 20 lunches?

4

12. One fence: $\frac{1}{4}$ can of paint.

How much for $\frac{2}{3}$ of a fence?

$\frac{1}{6}$

13. One serving: $\frac{1}{6}$ of a pie.

How much for 15 servings?

$2\frac{1}{2}$

14. One decade: $\frac{1}{10}$ of a century.

What part of a century is 1 year?

$\frac{1}{10}$

Add.

	a	b	c	d	e
1.	3.4 + 8.2 **11.6**	0.7 +0.3 **1.0**	14.2 + 5.1 **19.3**	23.5 + 10.8 **34.3**	46.9 + 9.8 **56.7**
2.	7.30 + 6.30 **13.60**	0.48 + 0.97 **1.45**	3.05 + 11.20 **14.25**	27.35 + 62.83 **90.18**	50.00 + 7.85 **57.85**
3.	17.36 + 4.04 **21.40**	2.20 + 15.76 **17.96**	1.10 + 10.00 **11.10**	100.10 + 10.10 **110.20**	37.38 + 37.69 **75.07**

Subtract.

	a	b	c	d	e
4.	5.9 − 0.3 **5.6**	1.2 − 0.8 **0.4**	65.5 − 12.7 **52.8**	10.4 − 9.8 **0.6**	40.0 − 8.2 **31.8**
5.	9.36 − 3.21 **6.15**	10.50 − 7.35 **3.15**	64.07 − 53.94 **10.13**	89.10 − 16.05 **73.05**	70.00 − 9.77 **60.23**
6.	7.46 − 1.34 **6.12**	79.23 − 62.43 **16.80**	89.81 − 4.79 **85.02**	66.83 − 13.05 **53.78**	50.00 − 46.13 **3.87**

Compute.

a	b	c
7. 6.1 + 3.76 **9.86**	31.05 − 15.7 **15.35**	48 − 17.25 **30.75**

Fill in each blank with the correct symbol.

	a	**b**
1.	128 mm = 12.8 _cm_	106 cm = 1.06 _m_
2.	50 ml = 0.050 _l_	2341 m = 2.341 _km_
3.	175 mm = 0.175 _m_	1.897 l = 1897 _ml_
4.	6432 g = 6.432 _kg_	6.438 m = 6438 _mm_

	a		**b**	
5.	1 _hm_ = 100 m	1 _cg_ = 0.01 g
6.	1 _dam_ = 10 m	1 _hl_ = 100 l
7.	1 _ml_ = 0.001 l	1 _cm_ = 0.01 m
8.	1 _dm_ = 0.1 m	1 _mg_ = 0.001 g

Underline the preferred unit of measure.

9. The distance between cities is measured in (<u>kilometres</u> or metres).

10. A baby's mass is measured in (<u>kilograms</u> or grams).

11. The length of a swimming pool is measured in (kilometres or <u>metres</u>).

12. The capacity of a carton of milk is measured in (kilolitres or <u>litres</u>).

13. The length of a pencil is measured in (metres or <u>centimetres</u>).

14. The mass of a vitamin pill is measured in (grams or <u>milligrams</u>).

15. The mass of an airmail letter is measured in (kilograms, <u>grams</u>, or milligrams).

**1.** Write the prime numbers between 1 and 80.

2	3	5	7	11	13	17	19	23	29	31
37	41	43	47	53	59	61	67	71	73	79

2. Every composite number can be expressed as the product of prime factors.
Complete the factoring of each composite number below.

36
/ \
4 × 9
$2 \times 2 \times 3 \times 3$

42
/ \
6 × 7
$2 \times 3 \times 7$

60
/ \
6 × 10
$3 \times 2 \times 2 \times 5$

75
/ \
3 × 25
$3 \times 5 \times 5$

84
/ \
4 × 21
$2 \times 2 \times 3 \times 7$

90
/ \
9 × 10
$3 \times 3 \times 2 \times 5$

100
/ \
4 × 25
$2 \times 2 \times 5 \times 5$

100
/ \
10 × 10
$2 \times 5 \times 2 \times 5$

100
/ \
5 × 20
$5 \times 4 \times 5$
$5 \times 2 \times 2 \times 5$

Match the description with the drawing.
Write the letter of the drawing in the correct blank.

1. Square   I
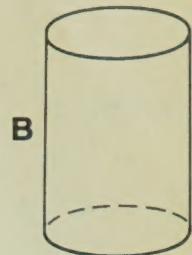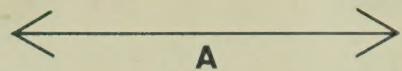
2. Circle   J
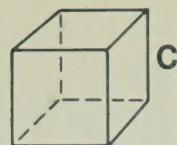
3. Triangle   D
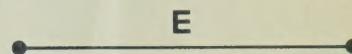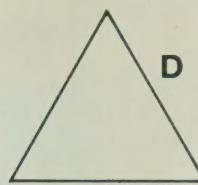
4. Line   A

5. Sphere   H
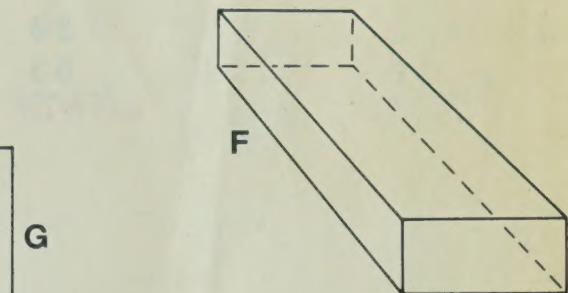
6. Hexagon   K
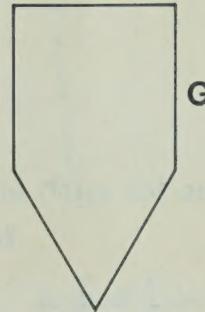
7. Pentagon   G

8. Rectangular prism   F

9. Line segment   E
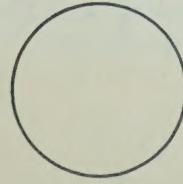
10. Cube   C

11. Cylinder   B
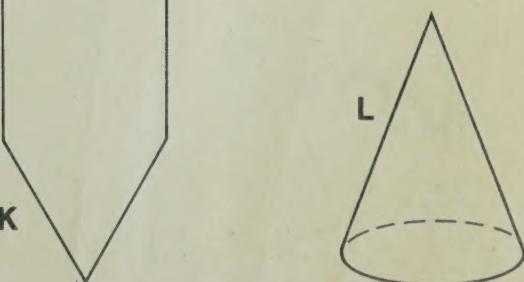
12. Cone   L

A

B

C

D

E

F

G

H

I

J

K

L

RET

Add.

	a	b	c	d	e
1.	627 + 99 **726**	743 + 298 **1041**	5413 + 486 **5899**	2762 + 9658 **12 420**	8006 + 1994 **10 000**

Subtract.

	a	b	c	d	e
2.	498 − 39 **459**	643 − 176 **467**	500 − 367 **133**	6782 − 1619 **5163**	7004 − 1236 **5768**

Multiply.

	a	b	c	d
3.	412 × 19 **7828**	728 × 83 **60 424**	907 × 22 **19 954**	832 × 541 **450 112**

Compute. Write the simplest name for each answer.

a

$4.\quad \frac{1}{2} + \frac{3}{5} = \underline{\;1\frac{1}{10}\;}$

b

$\frac{7}{8} - \frac{1}{3} = \underline{\;\frac{13}{24}\;}$

c

$\frac{3}{4} \times \frac{2}{3} = \underline{\;\frac{1}{2}\;}$

$5.\quad 2\frac{1}{8} + 1\frac{1}{2} = \underline{\;3\frac{5}{8}\;}$

$4\frac{4}{5} - \frac{2}{3} = \underline{\;4\frac{2}{15}\;}$

$14 - 6\frac{1}{6} = \underline{\;7\frac{5}{6}\;}$

Divide.

a

b

c

$6.\quad 17\overline{)471}\quad \mathbf{27\,R12}$

$21\overline{)672}\quad \mathbf{32}$

$88\overline{)7489}\quad \mathbf{85\,R9}$

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RETURN NOV 17 '81

RETURN FEB 3 '82

DUE EDUC FEB 22 '82
DUE EDUC MAR 1

DUE EDUC MAR 16 2'82

RETURN MAR 6 '82

F255

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